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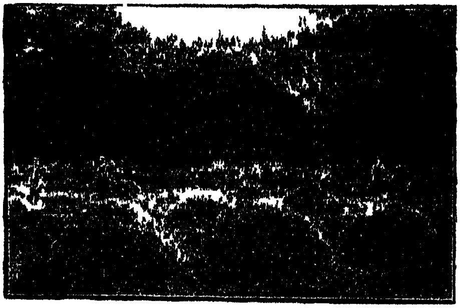

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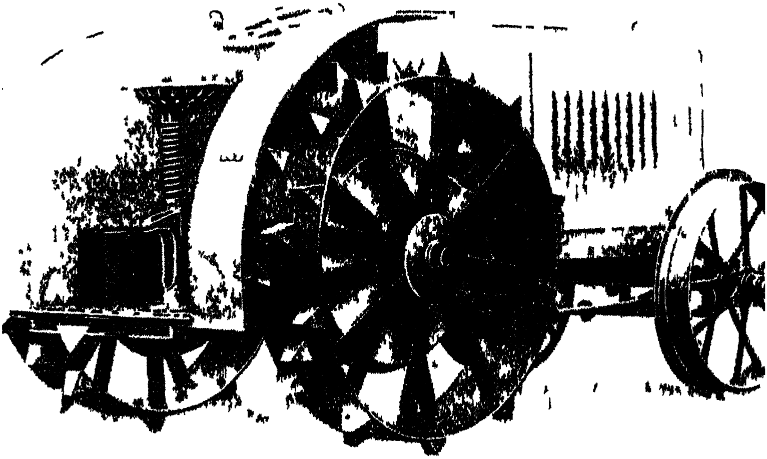

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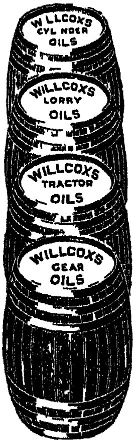

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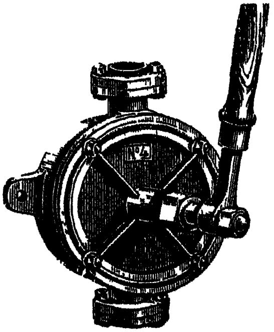

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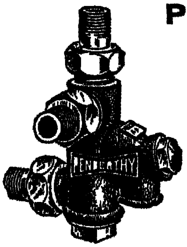

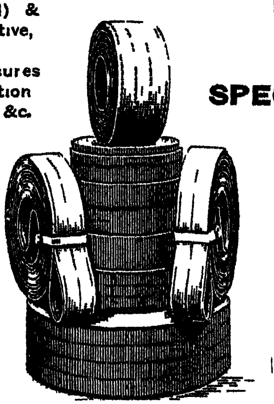

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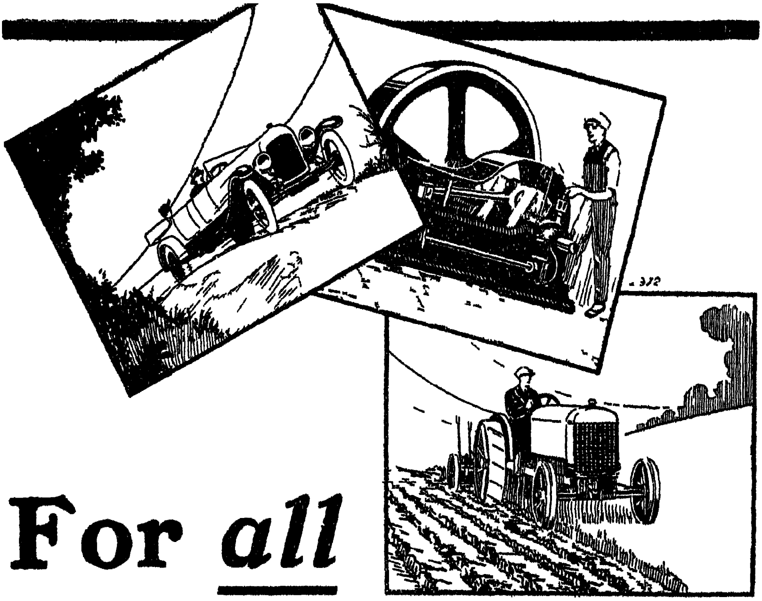

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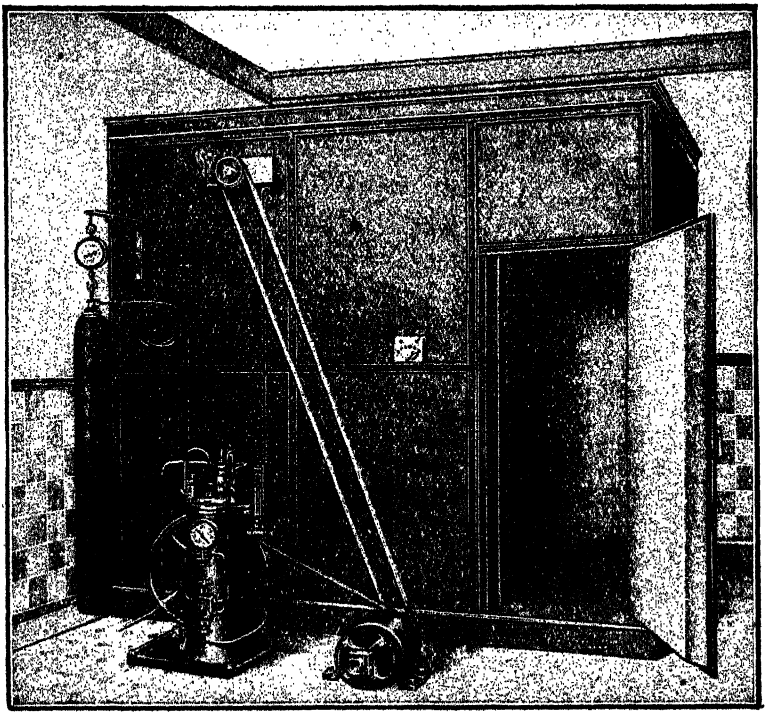

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"The Society will not be responsible for the accuracy of the statements or conclusions contained in the several papers in the Journal, the authors themselves being solely responsible."

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REPORT BY THE JUDGES ON THE TRIALS OF AGRICULTURAL MOTORS, 1920.

Immediately after the Armistice interest in trials revived. It was felt that it would be unfair to ask manufacturers, whose staffs had been serving at the front, to take part in competitive trials until they had had the opportunity of reorganising their works, and the conclusion was arrived at that the earliest reasonable date for such trials would be the Autumn of 1920.

With the addition of one extra class, the Regulations were the same as issued in 1914.

The selection of a site was no easy matter, it being necessary not only to procure light and heavy land, as well as some undulating land, but also to see that there was sufficient of each sort—as similar as possible—to accommodate all the machines in any one class.

After visiting various districts throughout the country, land at Aisthorpe and Scampton, near Lincoln, was found to be the most desirable. The Scampton Aerodrome provided excellent facilities for storing the tractors, etc., and for the necessary administrative offices.

The total area of the land retained was about 800 acres.

The fields were measured up, and four similar plots allotted to the several machines of each class. Owing, however, to the lateness of the harvest, it was found impossible at the last moment to clear the crops off some of the fields, and a fresh distribution of plots had to be effected. As this was done without loss of time, the trials were able to start according to programme. Unfortunately, there was no time to publish new diagrams of the trial fields for the guidance of the public, beyond the large scale plans in the office which showed the necessary corrections.

CLASSES AND PRIZES.

For this competition the Society decided to form seven classes for entry, the prizes for each class to be a first prize, gold medal and £20, and a second prize, bronze medal and £10.

The classes were arranged as follows :—

CLASS 1.—Internal-combustion direct traction engine, not exceeding 24 h.p., suitable for ploughing two furrows, 10 in. wide by 6 in. deep.

CLASS 2.—Internal-combustion direct traction engine, not exceeding 30 h.p., suitable for ploughing three furrows, 10 in. wide by 6 in. deep.

CLASS 3.—Internal-combustion direct traction engine, over 30 h.p., suitable for ploughing four furrows, 10 in. wide by 8 in. deep.

CLASS 4.—Direct traction steam-engine plant, suitable for ploughing four furrows, 10 in. wide by 8 in. deep. Engines to comply with the Light Road Locomotive Acts.

CLASS 5.—Internal-combustion double engine set with wire-rope haulage for ploughing three or four furrows, 10 in. wide by 8 in. deep. Engines to comply with Light Road Locomotive Acts.

CLASS 6.—Double steam-engine set with wire-rope haulage for ploughing three or four furrows, 10 in. wide by 8 in. deep. Engines to comply with Light Road Locomotive Acts.

CLASS 7.—Self-propelled plough for ploughing not more than four furrows, not more than 10 in. wide by not more than 8 in. deep.

HORSE-POWER.—The rated horse-power was obtained by the Society's formula $\frac{D^2 S R}{15400}$ where D is the cylinder diameter in inches; S is the stroke in inches by number of cylinders, and R is the number of revolutions per minute.

REGULATIONS AND CONDITIONS.

CLASSES 1–6.

1.—For the purpose of these trials an "Agricultural Tractor" shall be capable of :—

(*a*) Hauling direct in work or on the road a Plough, Cultivator, Harvester, or other Agricultural Implement.

(*b*) Driving Barn Machinery.

2.—The machines shall be tested for efficiency in carrying out various classes of work.

3.—Competitors will have to plough a given area of land, commencing with the size of furrow specified for each class, during which the fuel and water consumption will be recorded, and subsequently varying the depth and width at the discretion of the Judges.

In Classes 1, 2, 3 and 4 the Society is providing the ploughs in order to ensure uniformity of conditions. In the other classes competitors will provide their own ploughs.

> NOTE.—Consequent on representations made by several competitors as to the difficulty of coupling their motor tractors to the ploughs selected so as to allow of their running with both wheels on the land, the question has been considered and it has been arranged that, so far as the hitch of the plough is concerned, Competitors may either provide their own hitch or arrange with the Plough Makers for such modification of the hitch as may be necessary to meet their requirements. Such modifications will be effected on the responsibility of the Competitors concerned, and must be completed before the commencement of the Trials. The last date for giving instructions to the Plough Makers will be August 16, 1920.
>
> It must be clearly understood that no modification to any part of the plough aft of the hitch will be permitted.

4.—Each Competitor must, within ten days of the commencement of the trials, plough out *entirely* the plot allotted to him.

5.—Supplementary trials on various classes of land with ploughs and cultivators provided by the Society may be made at the discretion of the Judges, who may also decide to try any tractor with other types of implement they may consider necessary.

6.—Special attention will be paid in the ploughing and cultivating trials to the compression of the land by the machine, the space and time occupied in turning, the uniformity of the furrow ends and evenness of the furrow.

7.—The tractors in Classes 3, 4, 5 and 6 shall be capable of road haulage, and will be tested in that respect over courses which will be set out over the roads and land selected by the Society, and each Competitor shall declare before starting what weight he is prepared to haul over such course

The fuel, water, and other supplies consumed will be noted on the road trial. With selected tractors hill-climbing trials may be made. Tractors fitted with winding gear may have the opportunity of demonstrating its advantages.

8.—Tractors will be tested driving on to a pulley on a countershaft fitted with a brake. The diameter of pulley, speed of countershaft, and load on brake assimilating to those of a threshing machine.

9.—The time taken and attendance given will be noted in all trials.

10.—The fuel, whether solid or liquid, will be provided by the Society. The coal will be Hard Steam Coal of uniform quality, and the petroleum or other liquid of one of the recognised brands.

11.—Each Competitor to state how many men will be required to attend to the machine.

12.—The following are some of the points to which special attention will be directed:—

(*a*) Weight of machine.
(*b*) Weight per inch width of wheel and diameter of wheel
(*c*) Mechanical design and construction.
(*d*) Adaptability to various kinds of work, such as Harvesting and the like.
(*e*) Time taken to prepare for work.
(*f*) Ease and safety of handling.
(*g*) Ease of turning and space required for same.
(*h*) Efficiency of winding gear.
(*i*) Facility of attachment.
(*j*) Wheel devices.
(*k*) Attendance necessary.
(*l*) Consumption of fuel, water, and other supplies per unit of work done.
(*m*) Price.

SELF-PROPELLED PLOUGHS. CLASS 7.

The Trials of these will be on the same lines as the Ploughing Trials in Classes 1, 2 and 3.

13.—Competitors must appoint one representative through whom all communications to or from the Stewards or Judges shall be made.

14.—The Judges' decision, when duly recorded, will in all cases be final.

15.—The Society's Implement Regulations will apply to these Trials generally.

Note.—The trials in Classes 1, 2, 3 and 4 being competitive trials of motors and not of combined motors and ploughs, the Society provides the ploughs to ensure uniformity of conditions. In other Classes the Competitors will provide the ploughs.

16, Bedford Square,
LONDON, W.C.1.
July 30, 1920.

THOMAS McROW,
Secretary.

SUPPLEMENTARY INSTRUCTIONS TO COMPETITORS AS TO DELIVERY OF TRACTORS AND ORDER OF TRIALS.

The tractors to be delivered to the Scampton Aerodrome, about 7 miles from Lincoln Station. Competitors will have to make their own arrangements for transport, as the Trial Fields are outside the Railway Company's area of delivery.

All tractors must be delivered at the Aerodrome not later than 12 o'clock (noon) on Saturday, the 25th inst., where they will be stored until Monday morning, the 27th inst.

For the convenience of Competitors, tractors will be received at the Competitor's risk at the Aerodrome Site on Monday, 20th inst., and subsequent days; notice of the time of delivery must be previously sent to Mr. J. R. Jackson, The Mill, Saxilby, Lincoln.

Competitors must send a responsible person to superintend delivery and find necessary labour in connection therewith.

The inspection of Tractors in Class II. will commence at the Aerodrome on Monday morning, the 27th inst., at 9 a.m., when each competitor or his representative must be present to give such technical explanation as may be required, and afford facilities for checking any dimensions desired.

Competitors will be at liberty, as soon as the tractor is inspected, to take it with its plough on to Field O to make a preliminary trial, which done he will proceed to Field P or R and take up his position on the plot allotted to him, and will then drain his paraffin and petrol tanks empty ready to receive the measured supply of oil on Tuesday morning.

The Trials Fields will each have a distinguishing letter, and the several plots will be numbered consecutively as shown on plan.

During Monday each competitor will be informed of the number of the plot on which he will commence the trial of his tractor.

On each of the following days, each afternoon, a notice will be posted up at the Administration Office at the Aerodrome setting out the programme of the work for the succeeding day.

The trials will commence on the light land, and will probably occupy three days.

Those on the heavy land will commence on Thursday, the 30th inst.

Paraffin, petrol and coal will be provided by the Society; lubricating oil by the competitors.

Competitors, as well as their attendants, to identify them with their tractors, will be provided with distinguishing badges which they are requested to wear in a conspicuous position during the trials.

The Stewards, on the recommendations of the Judges, shall have power to postpone or suspend the trials in the event of unfavourable weather.

Tractors must each morning be stationed on the plot allotted to them and be ready to start work by 9 a.m.

Previous to commencing each trial the petrol and paraffin tanks must be drained empty.

The competitor must then state what quantity of petrol or paraffin he will require, and this will be supplied through the Observer who is in charge of the trial. Both the Observer and competitor (or his representative) must check over the quantity of oil served out and returned at the conclusion of each trial and endorse the docket for same.

In the case of steam engines a similar course will be adopted in the supply of coal, &c.

Water-carts will be in attendance and the water will be measured.

Each competitor must state definitely the number of attendants he will require to work his tractor, or steam engine and plough.

Any assistance rendered beyond that declared as necessary will be noted and the man-minutes recorded.

Each competitor shall appoint a responsible member of his staff as his manager to receive instructions from the Steward or Engineer, and by whom all enquiries for information must be made.

Competitors and their representatives shall assist in the carrying out of the Regulations and abide by the orders of the Stewards, especially in the way of keeping the public from crowding round their machines and impeding the work of the Judges.

The Judges and Stewards are empowered to enforce the Regulations, and, if circumstances render it desirable, to issue such additional Regulations as they may deem desirable.

No cards, printed matter or other advertisement of any kind to be carried on any tractor or implement.

Neither the Royal Agricultural Society of England nor the Society of Motor Manufacturers and Traders shall be liable for any loss or damage sustained by competitors or others at, or in connection with, the trials.

F. S. COURTNEY.

September 13th, 1920.

The Judges appointed by the Royal Agricultural Society of England were composed of three groups of four each.

In order to ensure complete interchange of the results of their own observation the Judges were arranged in four sets of three, one from each of the three groups, the composition of the sets being varied as occasion required. It may be noted that after discussion of the figures of performance, weights and other particulars, the decision of the Judges was unanimous on every award.

There were 46 entries: 10 in Class 1; 22 in Class 2; 3 in Class 3; 1 in Class 4; 2 in Class 5; 1 in Class 6; and 7 in Class 7.

Of these, 38 took part in the competition and 36 finished, 2 only being withdrawn during the trials. Those that completed were: 8 in Class 1; 17 in Class 2; 2 in Class 3; 1 in Class 4; 2 in Class 5; 1 in Class 6; and 5 in Class 7.

The general conditions of the trials were as follows: –

A preliminary examination of the tractors was made by the Judges on September 27. On September 28, Classes 2 and 5 worked on light land. On September 29, Classes 1, 3, 4, 6 and 7 worked on light land. On September 30, Classes 1, 3, 4, 6 and 7 made supplementary trials on light land, and Classes 2 and 5 worked on heavy land. On October 1, Classes 1, 3, 4, 6 and 7 worked on heavy land. On October 2, Class 7 worked on heavy land. On October 4, ploughing was done on hill land and tests of stopping down hill were carried out. On October 5, further hill ploughing and stopping tests were made. The overall diameter of turning circles was measured and machinery driving trials were made. On October 6, further trials were made, and selected machines were weighed and examined. On October 7, the trials were completed and the Judges' awards were published.

AWARDS.

CLASS 1. Internal Combustion Direct Traction Engine not exceeding 24 h.p., suitable for ploughing two furrows, 10 in. wide by 6 in. deep.

1st Prize, Gold Medal and £20. J. I. Case Threshing Machine Co.

2nd Prize, Bronze Medal and £10. H. G. Burford & Co., Ltd. ("Cletrac").

CLASS 2. Internal Combustion Direct Traction Engine not exceeding 30 h.p., suitable for ploughing three furrows, 10 in. wide by 6 in. deep.

1st Prize, Gold Medal and £20. Ancona Motor Co., Ltd. ("British Wallis").

2nd Prize, Bronze Medal and £10. Peter Brotherhood, Ltd. ("Peterbro").

CLASS 3. Internal Combustion Direct Traction Engine over 30 h.p., suitable for ploughing four furrows, 10 in. wide by 8 in. deep.

1st Prize, Gold Medal and £20. John Lauson Manufacturing Co.

2nd Prize, Bronze Medal and £10. (Not awarded.)

CLASS 4. Direct Traction Steam Engine Plant, suitable for ploughing four furrows, 10 in. wide by 8 in. deep. Engines to comply with the Light Road Locomotive Acts.

1st Prize, Gold Medal and £20. Mann's Patent Steam Cart & Wagon Co., Ltd.

CLASS 5. Internal Combustion Double Engine Set, with Wire-rope haulage for ploughing three or four furrows, 10 in. wide by 8 in. deep. Engines to comply with Light Road Locomotive Acts.

1st Prize, Gold Medal and £20. John Fowler & Co. (Leeds), Ltd.

2nd Prize, Bronze Medal and £10. J. & H. McLaren, Ltd.

CLASS 6. Double Steam Engine Set, with Wire-rope haulage for ploughing three or four furrows, 10 in. wide by 8 in. deep. Engines to comply with the Light Road Locomotive Acts.

1st Prize, Gold Medal and £20. John Fowler & Co. (Leeds), Ltd.

CLASS 7. Self-Propelled Plough for ploughing not more than four furrows of not more than 10 in. wide by not more than 8 in. deep.

1st Prize, Gold Medal and £20. Crawley Agrimotor Co., Ltd.

2nd Prize, Bronze Medal and £10. Motrac Engineering Ltd. ("Moline").

DESCRIPTIONS OF COMPETING MACHINES.

The following are descriptions and notes on the machines actually taking part in the trials. The names of the tractors with the data and particulars supplied by the makers, corrected as far as possible, are given in Tables I and II in which they are arranged by classes. Table III gives the observed and calculated results of the Trials (see pages 45 to 56).

CLASS I.

BRITISH WALLIS.

No 3. ANCONA MOTOR CO , LTD.

This tractor is manufactured in England at Lincoln by Ruston & Hornsby, Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at the low speed of 850 revolutions per minute, and rated at 23·6 h.p. The motor is governed by a hydraulic, positive-type governor, the effect being obtained by the pressure of the circulating water acting on a rubber diaphragm. The clutch consists of three metal discs, separated by two "ferodo" discs. It is easy of access, and adjustment is made by means of a spring plunger, which engages with one of twelve equally-spaced holes. The fuel is paraffin, petrol being used only for starting. The Halliday carburettor which is fitted takes water through a special jet, and delivers it to the intake; the air, which is drawn in through a "periscope pipe" at a considerable height above the level of any chaff that may be blown about in harvesting, therefore contains water vapour when entering the engine cylinder. The paraffin tank has a capacity of 20 gallons The radiator is of the honeycomb type. The front wheels are 30 in. diameter by 8 in wide; the rear wheels are 48 in. diameter by 12 in. wide, and the wheel-base is 84 in.

There are two sets of brakes; the first consists of internal-expanding "ferodo" lined shoes fitted to the rear wheels and independently operated on each wheel by a foot pedal. These drums are 5 in. diameter with shoes 2½ in. wide. The second brake is fitted to the countershaft and acts on the belt pulley.

There are two forward speeds and one reverse; the speed change is of the sliding-gear type, and a differential lock is fitted; the final drive is by worm and wheel. A special design of digger-type spuds is supplied. The hauling gear was not fitted to this vehicle, but is described under No. 4, Class 2.

The ground clearance of 13 in. is large; the position of the draw-gear attachment is carried so far back as to minimise the risk of capsizing by rearing. There is a range of adjustment of 3½ in. in the height of the draw-bar and of 10½ in. laterally.

The belt speed is about 2,000 ft. per minute, the pulley being 18 in. diameter by 6¾ in. wide. The steering is by worm and wheel, and the tractor is spring supported.

The tractor has an overall length of 11 ft., an overall width of 5 ft. 1 in. It can turn in a circle of 26 ft. outside diameter, and it weighs approximately 37½ cwt. in working order.

AUSTIN.

No. 5. Austin Motor Co., Ltd.

This tractor is manufactured in England at Northfield, near Birmingham, by the Austin Motor Co., Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 1,200 revolutions per minute, and rated at 21·9 h.p. The motor is provided with a governor of the centrifugal type fitted to the cam-shaft. The lubrication is of the forced-feed type, the oil being supplied through a hollow crankshaft. The clutch is of the steel-cone type engaging with detachable " ferodo " segments. The fuel is paraffin, petrol being used only for starting. The carburettor is of the Zenith type, and the intake air passes through a cleaner which can be used either wet or dry. The paraffin tank has a capacity of 10 gallons. The radiator is of the gilled type, and is stated to have 12 sq. ft. of tube surface. The radiator fan is driven by enclosed and lubricated spur gear. The front wheels are 30 in. diameter by 6 in. wide ; the rear wheels are 42 in. diameter by 10 in. wide, and the wheel-base is 68 in.

Each rear wheel is fitted with an internal-expanding brake, 12 in. diameter by 1½ in. wide, capable of being operated independently. There are two forward speeds and a reverse ; the speed change is of the sliding-gear type ; a differential is fitted without differential lock. The final drive is through spur gear. Each driving-wheel is fitted with twelve detachable spuds, for which rubber pads can be substituted for road haulage ; angle strakes are fitted for Colonial use. The front axle is mounted on a spring, giving great flexibility on uneven ground. Good ground clearance of 12 in. is provided ; the position of the draw-gear pin is well to the rear (2 ft. 10 in.) of the centre of the back axle ; it is provided with a range of 9 in. vertical adjustment, and a range of 15 in. to each side is given for lateral adjustment. The belt speed is 2,260 ft. per minute, the pulley being 24 in. diameter by 5 in. wide. The steering has a reduction ratio of 16 to 1.

The tractor has an overall length of 9 ft. 2 in., an overall width of 5 ft. 1 in. It can turn in a circle of 25 ft. 4 in. outside diameter, and it weighs approximately 30½ cwt. in working order.

CLETRAC.

No. 10. H. G. Burford & Co., Ltd. (Figs. 2 & 4).

This tractor is manufactured in America at the works of the Cleveland Tractor Co., Cleveland, Ohio. It is propelled by a four-cylinder engine with vertical cylinders running at 1,000 revolutions per minute and rated at 22·9 h.p. The motor is governed by a centrifugal governor acting on the main throttle. The clutch is of the dry plate type with "ferodo" discs. There is only one forward speed, but this is capable of being varied by the throttle from 2½ to 4 miles per hour, and there is one reverse speed capable of being varied from 1½ to 2 miles per hour. The fuel is paraffin, petrol being used for starting only. The paraffin tank has a capacity of 11 gallons, and the engine base holds 1½ gallons of lubricating oil. The radiator is of the gilled tube type, about 4 sq. ft. surface, and the total water, including that in the clarifier, is 4 gallons The carburettor is of the Kingston type.

The tractor is supported on chain-tracks 8 in. wide and having a bearing of 4 ft. 2 in on the ground, the total supporting area is 800 sq. in., or 400 sq. in. for each track; the weight of the tractor is transferred to each track by three rollers.

Steering is effected by band brakes acting on the differential, the brakes slowing down one track and allowing the other to over-run. The ground clearance is 12 in. The draw-bar is 15 in. above the ground, and the distance of the centre of the back chain-wheel to the centre of the draw-bar pin is 10 in. There is a lateral adjustment for the draw-bar pin of 15 in. An emergency brake, 8 in. diameter by 2½ in. wide, is fitted acting on the differential. The belt speed is about 2,100 ft. per minute, the pulley being 8 in. diameter by 6 in. wide.

The tractor is 8 ft. 6 in. long overall by 4 ft. 2 in. wide. It is capable of turning in a circle of only 13 ft. outside radius, and its weight in full working order is about 32¾ cwt.

CASE 10–18.

No. 12. J. I. Case Threshing Machine Co. (Figs. 1 & 3)

(Representative in England: F. J. Woodward, 134 King Street, Hammersmith, W.)

This tractor is manufactured in the United States of America by the J. I. Case Threshing Machine Co., Inc., of Racine, Wis. It is propelled by a four-cylinder engine with vertical cylinders, running at 1 050 revolutions per minute, and rated at 20·5 h.p. The heads are removable in one piece with the overhead valves. The motor is set across the tractor, that is to say, its axis is parallel to the rear axle. It is governed by a centrifugal governor, enclosed and running in oil. The main part of the crank-case forms part of the main frame, which is of the one-piece casting type. The ignition is by high-tension magneto with impulse starter. The clutch is of the expanding-shoe type, with clutch shoes of cast steel faced with asbestos friction fabric. There are two forward speeds, 2¼ miles per hour and 3½ miles per hour, and one reverse speed. The fuel is paraffin, petrol being used only for starting. The paraffin tank capacity is 9 gallons; the lubricating oil tank holds 4 gallons. The radiator is of the copper tube and fin type. The total capacity of the water tank and radiator is 7 gallons. The carburettor is of the Kingston vertical, single nozzle type, and the intake air is cleaned by being drawn through water in an air-washer.

A "Sylphon" thermostatic regulator is fitted for controlling the circulation of the cooling water. This regulator allows the water in the cylinder jackets to rise to the temperature of about 160° to 180° F., at which the thermostatic unit expands. The cylinders are thus allowed to become hot enough to vaporise the paraffin more quickly than with an ordinary circulation system, and the change over from petrol is enabled to be made earlier.

The front wheels are 30 in. diameter and 6 in. wide; the rear wheels are 42 in. diameter and 9 in. wide, and the wheel-base is 65 in.

There is a pulley brake which can be operated by the clutch lever when the transmission gears are in mesh. The speed change is of the sliding-gear type, and is fitted with a differential gear. Detachable angle-iron spuds or spades of wedge shape are used. The ground clearance is 13 in. There is no vertical adjustment, but large lateral adjustment of the draw-gear in seven positions.

The belt speed is about 3,900 ft. per minute, the pulley being 14 in. diameter by 5¼ in. wide. The front axle is pivoted to the frame so that the tractor is carried on a three-point suspension; it is not sprung.

The tractor has an overall length of 8 ft. 5½ in., an overall width of 4 ft. 8 in. It can turn in a circle of 25 ft. outside diameter, and it weighs about 34 cwt. in working order.

FORDSON.

No. 19. Henry Ford & Son, Ltd.

This tractor is manufactured in Ireland by Henry Ford & Son, Ltd. It is propelled by a four-cylinder engine having vertical cylinders cast in one block. It runs at 1,000 revolutions per minute, and is rated at 20·8 h.p. No governor is fitted. The clutch is of the multiple disc type with seventeen hardened discs running in oil. The fuel is paraffin, petrol being used for starting. The paraffin tank capacity is 17½ gallons, and that of the petrol tank is ½ gallon. The radiator is of the fin-tube type. The total capacity of the water tank and radiator is 9 gallons. The carburettor is that known as the Holley vaporiser, and the intake air is cleaned by passing through a float type air-washer. The front wheels are 27 in. in diameter by 5¼ in. wide; the rear wheels are 42 in. diameter by 12 in. wide, and the wheel-base is 63 in. There are three forward speeds, a low gear of 1½ miles per hour, an intermediate ploughing speed of 2¾ miles per hour, and a high speed of 6¾ miles per hour, and one reverse speed of 2½ miles per hour. The speed change is of the sliding-gear type; there is a differential gear without lock. No brakes are fitted.

Riveted diagonally across the full width of the rear wheels are fourteen special angle-iron cleats. Extension rims (extra) may be used on the rear wheels for work on heavy soil, and nine rubber pads may be fitted to each wheel, after removal of the cleats, for road haulage. The ground clearance is 11 in., and the position of the draw-gear pin is about 13½ in. behind the centre of the back axle. Its height above the ground is 12 in.; it is without vertical adjustment, but with lateral adjustment in five positions about 1¾ in. apart. The belt speed is about 2,500 ft. per minute, the pulley being 9½ in. diameter by 6½ in. wide, and running at the normal speed of the engine.

The tractor has an overall length of 8 ft. 6 in., an overall width of 5 ft. 2 in. It can turn in a circle of 22 ft. 6 in. outside diameter, and it weighs about 23¾ cwt. in working order.

GARNER.

No. 23. Henry Garner, Ltd.

This tractor is manufactured in the United States of America. It is propelled by a four-cylinder engine with vertical cylinders, running at 900 revolutions per minute and rated at 23·2 h.p. The motor is fitted with a centrifugal governor controlled by a spiral spring, the tension of which can be varied by the hand control lever on the steering column, giving engine speeds from a minimum up to 900 revolutions per minute. The clutch is of the type known as the Borg & Beck single plate. The fuel is paraffin, petrol being used for starting. Water is injected with the fuel through an auxiliary float chamber; the carburettor is of the Cox Atmos type fitted with a Bennett dry air-cleaner. The radiator is of the tubular type. The front wheels are 30 in. in diameter by 4 in. wide; the rear wheels are 40 in. diameter by 10 in. wide, and the wheel-base is 6 ft. 4 in.

There is one internal-expanding brake on each rear wheel capable of being operated independently or simultaneously by foot pedals; the brakes are 15 in. diameter by 3 in. wide, and are of the self-retaining type. There are three forward speeds, 1·7, 2·7 and 5·2 miles per hour, and there is one reverse speed 1·7 miles per hour. The speed change is of the sliding-gear type, fitted with a differential but without a differential lock

For use on the land, angle-strakes mounted on base rims in three sections, fitted with the patent quick attachment, can be used, and when working on the road solid rubber tyres, with patent wave tread, in four sections can be substituted. A semi-elliptic leaf spring is fitted to the front axle.

The ground clearance is 9½ in.; the position of the draw-gear pin behind the centre of the back axle is 26 in., and its height above the ground can be varied from 12½ in. maximum to 8 in. minimum. The range of lateral adjustment is 15 in., and, owing to the position of the draw-gear pin, there is no risk of accident by rearing. The belt speed is about 1,950 ft. per minute at the normal engine speed of 900 revolutions per minute, the pulley being 8¼ in. diameter by 8¼ in. wide.

The tractor has an overall length of 10 ft. 6 in., an overall width of 5 ft. 6 in. It can turn in a circle about 24 ft. 8 in. diameter, and it weighs about 36 cwt. in working order.

SAMSON MODEL M.

No. 24. General Motors, Ltd.

This tractor is manufactured in the United States of America at the works of the Samson Tractor Company, at Janesville It is propelled by a four-cylinder engine with vertical cylinders running at 1,000 revolutions per minute and rated at 22·9 h.p. The lubrication is forced through the main bearings and through the crankshaft to the connecting-rod big-end bearings by a pump driven off the camshaft. The motor is fitted with a governor of the centrifugal type, operated from the magneto-drive gear, and consisting of a spindle with four grooved arms, each containing a steel ball, which operates on a sliding disc pressing against a button which in turn operates by a rod on the spindle carrying the arm connected to the butterfly valve in the induction pipe. The clutch is of the multiple disc type, having nineteen steel discs running in oil; the plates are kept in engagement by six coiled springs. The fuel is paraffin, petrol being used for starting, and the change being made after the vaporiser has become heated. The carburettor is of the "Kingston" standard float type with adjustable jet, and the air intake is passed through a water air-cleaner. The paraffin tank has a capacity of 18 gallons. The radiator is of the tubular type. The front wheels are 27 in. diameter by 4½ in. wide, and the rear wheels are 45 in. diameter by 12 in. wide. The wheel-base is 66 in.

There is one brake of the block type, 3½ in. by 1½ in., "ferodo" lined, acting on the inside of the 18-in. diameter belt pulley.

The tractor has two forward speeds of about 2 and 3 miles per hour and one reverse of 1 mile per hour. The speed change is of the sliding-gear type, and a differential without lock is fitted. Angle-section cleats are used on the land. The ground clearance is 10 in.; the position of the draw-gear attachment is 15 in. behind the back axle centre; it has no vertical adjustment, but a lateral adjustment of 3½ in. The belt speed is about 1,750 ft. per minute, the pulley being 18 in. diameter by 6 in. wide.

The tractor has an overall length of 9 ft. 6 in., an overall width of 4 ft. 10 in. It turns in a circle 27 ft. 2 in. outside diameter, and its weight in working order is about 30¼ cwt.

SAUNDERSON UNIVERSAL JUNIOR.

No. 42. Saunderson Tractor & Implement Co., Ltd.

This tractor is manufactured in England by the Saunderson Tractor & Implement Co., Ltd. It is propelled by a two-cylinder engine with vertical cylinders running at the speed of 950 revolutions per minute, and is rated at 20·0 h.p. The motor is governed by a centrifugal governor acting on the throttle. The clutch is of the cone type with leather face. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Degory" type, and the intake air is cleaned by passing through a gauze filter. The paraffin tank has a capacity of 8 gallons. The radiator is of the film type, 80 sq. ft. in area, and the total water capacity of the tank and radiator is 15 gallons. The front wheels are 27 in. diameter by 5 in. wide; the rear wheels are 42 in. diameter by 10 in. wide, and the wheel-base is 78 in.

There are two brakes: a foot brake, with internal-expanding shoes metal to metal, on the gear shaft, acting on both rear wheels, and a hand brake, with expanding shoes, acting on the differential drum. There are two forward speeds and one reverse. The speed change is of the sliding-gear type, and a differential is fitted without lock. Angle-section spuds are supplied and also angle-section overhanging biters.

The ground clearance of 16 in. is large. The height of the draw-gear can be varied from a maximum of 23½ in. to a minimum of 16¾ in., and a lateral adjustment of the draw-gear of 15 in. is provided. The position of the draw-gear pin centre, 30 in. behind the back axle centre, is such as to minimise any risk of capsizing by rearing. The belt speed is about 3,000 ft. per minute, the belt pulley, running at the engine speed, being 12 in. diameter and 6½ in. wide.

Special attention has been given by the manufacturers to accessibility for all units, such as the clutch and belt pulley, and there is provision on the clutch sleeve for making the pulley fast or loose. The suspension is of the three-point type.

The tractor has an overall length of 10 ft. 1 in., an overall width of 4 ft. 2¼ in. It can turn in a circle of about 26 ft. outside diameter, and it weighs approximately 30 cwt. in working order

CLASS II.

PARRETT.

No. 1. THE AGRI-TRACTOR CONTRACT CO., LTD.

This tractor is manufactured in the United States of America by the Parrett Tractor Company. It is propelled by a four-cylinder engine having vertical cylinders mounted crosswise of the tractor, running at 1,000 revolutions per minute and rated at 25·8 h.p. The motor is fitted with a ball-type governor throttling directly and connected to the throttle at all speeds. The clutch is of the enclosed disc type with only three discs, the mechanism being lubricated by oil spray from the transmission. Lugs on the centre plate mesh into the rim of the fly-wheel, ensuring a positive drive. The discs are faced with " ferodo." The fuel is paraffin, petrol being used for starting. The carburettor is of the " Kingston " special paraffin type, and the air passes through an air-washer before entering the carburettor. The paraffin tank has a capacity of 18 gallons. The radiator is of the honeycomb type mounted lengthwise, and cooled by a fan 20 in. in diameter mounted on anti-friction bearings. The capacity of the water tank and radiator is 7 gallons. The front wheels are 46 in. diameter by 4 in. wide, and the rear wheels are 60 in. diameter by 10 in. wide. The wheel-base is 94 in.

There is one brake operated by foot-pedal on the left-hand side of the driver. It is of the band type, acting on the hub of the spur gear, which is 14 in. diameter by 2 in. wide. There are three forward speeds, 1¾, 2⅜ and 4 miles per hour. The reverse is 1·8 miles per hour. The speed change is of the sliding-gear type fitted with differential, but without differential lock. Every heavy bearing surface is carried on ball or roller " Skefko " bearings. The bottom of the crank-case can be easily detached, giving easy access to all the working parts of the engine.

Four different styles of spuds are made for use on this tractor, cone, spade, angle-iron and extension angle-iron, and these may be obtained in different sizes to suit varying working conditions.

The ground clearance is 18 in., and the draw-gear pin is placed 42 in. behind the centre of the back axle, so that there is no risk of capsizing by rearing. There is no vertical adjustment to the draw-gear, but a lateral adjustment of 2 ft. 1 in. to each side is provided. The belt speed is about 1,350 ft. per minute, the pulley being 12 in. diameter by 7½ in. wide, with convex face, cross ground to give greater adhesion to the belt.

The overall length of the tractor is 12 ft. 2 in.; the overall width is 6 ft. 1 in. It is capable of turning in a circle of 24 ft. 4 in. outside diameter, and its weight in working order is about 46½ cwt.

HART-PARR 30.

No. 2. Coenraad de Waal.

This tractor is manufactured in the United States of America by the Hart-Parr Co., of Charles City, Iowa. It is propelled by a two-cylinder engine with horizontal cylinders running at 750 revolutions per minute and rated at 28·8 h.p. The motor is fitted with a centrifugal gear-driven governor acting on the throttle. The clutch is of the contracting band type, 15 in. diameter by 2 in. wide with asbestos face; it is lever controlled and easily adjustable. The fuel is paraffin, and it is possible to inject water with the fuel; petrol is used for starting. The carburettor is of the "Schebler" type with patented paraffin shunt. The intake air is taken by a periscope pipe, and can be passed through a water-cleaner equipment (extra). The paraffin tank has a capacity of 23 gallons. The radiator is of the honeycomb type with copper core, the total water capacity of the radiator and tank being 10 gallons. The front wheels are 28 in. diameter by 5 in. wide; the rear wheels are 52 in. diameter by 10 in. wide. The wheel-base is 7 ft. 5 in. Two independent brakes are fitted, one on the differential and one on the pulley.

There are two forward speeds of 2 and 3 miles per hour, and one reverse of about 1½ miles per hour. The speed change is of the sliding-gear type, and a differential is fitted with differential lock. Three types of spuds are fitted, spade spuds, cone spuds and strakes, the latter adjustable for three positions—straight across, at 30°, and at 45°. Good ground clearance of 16½ in. is provided. The position of the draw-gear pin admits of vertical adjustment from zero to 16½ in. above the ground, and a lateral adjustment is provided of a total of 48 in.

The belt speed is 2,750 ft. per minute at normal engine revolutions, the belt pulley being 14 in. diameter by 8 in. wide.

The length of the tractor overall is 11 ft. 9 in., and the width overall 6 ft. 4 in. It can turn in a circle 23 ft. 4 in. outside diameter, and its total weight full and in working order is about 49 cwt.

BRITISH WALLIS.

No. 4. Ancona Motor Co., Ltd. (Figs. 5 & 7).

(See No. 3, Class I, p. 7.)

This tractor is manufactured in England at Lincoln by Ruston & Hornsby, Ltd., and is identical in all main particulars with No. 3 described above under Class I. It was fitted with hauling gear, the drum being 19 in. in diameter and the hauling-gear rope ⅜ in. diameter. The hauling-gear fitted to this tractor is a special fitting (extra) and only attached if required.

AUSTIN.

No. 6. Austin Motor Co., Ltd.

(See No. 5, Class I, p. 8.)

This tractor is manufactured in England, at Northfield, near Birmingham, by the Austin Motor Co., Ltd., and is identical in all main particulars with No. 5 described above under Class I. The motor governor was set for the higher speed of 1,500 revolutions per minute, raising the rated horse-power to 27·4.

BLACKSTONE.

No. 8. Blackstone & Co., Ltd.

This tractor is manufactured in England, at Stamford, by Blackstone & Co., Ltd. It is propelled by a three-cylinder engine with vertical cylinders running at 750 revolutions per minute and rated at 23·8 h.p. The motor is governed by a centrifugal governor. The clutch is of the cone type, with "ferodo" face arranged in the engine fly-wheel and operated by a pedal. The fuel is paraffin, and in the case of this motor petrol is not used, the start being on paraffin from cold by means of compressed air. There is no carburettor as generally understood, but the engine works on a patented direct combustion cold-start system; no water is injected with the fuel. The paraffin tank has a capacity of 10 gallons. The radiator is of tubular type with fins, and is served by a circulating tank; the approximate area of cooling surface is 130 sq. ft. The capacity of the water tank and radiator is 6 gallons. The tractor is supported on two chain-tracks, each 9 in. wide with 52 in. length in contact with the ground; the supporting area of each track being 468 sq. in., and the total area 936 sq. in. The load is transferred to each chain-track by four rollers.

The brake is foot-operated on a drum on the back of the main-drive bevel wheel on the second-motion shaft; the brake drum is 10½ in. diameter by 1½ in. wide. There are three forward speeds, 1·9, 2·8 and 3·7 miles per hour, and one reverse speed, 1·5 miles per hour. The speed change is of the sliding-gear type.

The ground clearance is 7½ in.; the draw-bar is of the fixed type 18½ in. above the ground, the distance from the centre of the back chain-wheel to the centre of the draw-bar pin being 9½ in. There is a lateral adjustment of 10¼ in. in the draw-gear.

The belt speed is about 2,300 ft. per minute, the pulley being 18 in. diameter by 7 in. wide. Steering is effected by a steering lever acting through a patented arrangement upon worms and brakes on the bevel wheels of the differential gear.

The tractor has an overall length of 8 ft. 1 in., an overall width of 4 ft. 6 in. It can turn in a circle of 22 ft. 8 in. outside diameter, and it weighs approximately 45 cwt. in working order.

CLETRAC.

No. 11. H. G. Burford & Co., Ltd.

This tractor is identical with No. 10 described above in Class I.

CASE 15-27.

No. 13. J. I. Case Threshing Machine Co.

(Representative in England: F. J. Woodward, 134 King Street, Hammersmith, W.)

This tractor is manufactured in the United States of America at the works of the J. I. Case Threshing Machine Co., Racine, Wis. It is propelled by a four-cylinder engine with vertical cylinders cast in one block with overhead valves and fitted with detachable liners. It runs at 900 revolutions per minute and is rated at 28·4 h.p. The motor is governed by a centrifugal governor of the ball type enclosed and running in oil. The clutch is of the expanding-shoe pattern of cast-steel, faced with asbestos friction fabric. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Kingston" vertical single nozzle type, and the intake air is cleaned by being drawn through water. The paraffin tank has a capacity of 18 gallons. The radiator is of the copper-tube and fin type. The tank capacity, including that of the radiator, is 11 gallons of water. The front wheels are 32 in. diameter by 6 in. wide, and the rear wheels 52 in. diameter, by 12 in. wide, and the wheel-base is 76½ in.

There is a pulley brake operated by the clutch lever on the pulley when the transmission gears are in mesh. There are two forward speeds, 2¼ miles per hour and 3 miles per hour, and one reverse, 1¾ miles per hour; the speed change is of the sliding-gear type. Angle-iron or wedge-shaped spuds are supplied; no hauling gear is normally fitted. The ground clearance is 14 in.; the draw-gear is at a fixed height of 14 in, and has a total lateral adjustment of 3 ft. 6 in The belt speed is about 3,750 ft. per minute, the pulley being 16 in. diameter by 6½ in. wide. The steering reduction gear is totally enclosed. The tractor is carried on three-point suspension, but is not sprung.

The tractor has an overall length of 10 ft. 7 in, an overall width of 6 ft. It can turn in a circle 31 ft. 8 in. outside diameter, and it weighs approximately 53 cwt. in full working order.

CHASE.

No. 14. CHASE TRACTORS CORPORATION, LTD.

This tractor is manufactured in Canada, at Toronto, by the Chase Tractors Corporation, Ltd, and is propelled by a four-cylinder "Buda" motor with vertical cylinders cast in one block, running at 950 revolutions per minute and rated at 24·5 h.p. The motor is governed by a "Pierce" centrifugal governor enclosed and acting on the throttle. The clutch is of the "Bierman" internal expanding-shoe type, 14 in. diameter, fitted in the engine fly-wheel. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Kingston" automatic float feed type, and the intake air is cooled by an "R.W." water air-washer. The paraffin tank has a capacity of 12 gallons, the radiator is of the "Perfex" type set longitudinally and fitted with a 20 in. fan. The tank capacity, including that of the radiator, is 6 gallons of water. The front wheel is 36 in. diameter by 8 in. wide, the rear wheels are 48 in. diameter by 12 in. wide, and the wheel-base is about 8 ft. 6 in

There is one brake of the contracting band type applied to the pinion shaft engaging with the bull-ring on the rear wheels No differential is fitted. There are two forward speeds, 1½ and 2½ miles per hour respectively, and one reverse at 1 mile per hour. The speed change is of the sliding-gear type. Each rear wheel can be clutched individually. The spuds used are twelve 2½ in. angles to each wheel, and extension rings can be fitted of 22 in. face each.

The ground clearance is 15 in, and the position of the draw-gear pin centre, 30 in. behind the back axle centre, is sufficient to minimise risk of capsizing by rearing. There are three vertical positions for the draw-gear at heights of 15 in., 18 in. and 21 in. respectively; there is a total lateral adjustment of 2 ft. 6 in., and the draw-gear can be fixed in five positions. The belt speed is about 2,500 ft. per minute, the belt pulley being 10 in. diameter by 8 in. wide.

The tractor has an overall length of 11 ft. 8 in., an overall width of 6 ft. It can be turned in a circle 16 ft. 6 in. outside diameter, and it weighs approximately 48½ cwt. in working order.

TWIN CITY 12–20.

No. 16. Fairbanks, Morse & Co., Ltd.

This tractor is manufactured in the United States of America by the Minneapolis Steel and Machinery Co., of Minneapolis, Minn., and is propelled by a four-cylinder motor with vertical cylinders having four overhead valves to each and provided with a special arrangement for making it impossible for the valves to drop into the cylinders. The motor runs at 1,000 revolutions per minute and is rated at 28·1 h.p. It is governed by an enclosed centrifugal governor acting on a throttle in the induction pipe. The clutch is of the dry single disc type. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Twin City Holley Kerosene" type, the intake air being passed through a "Bennett" dry cleaner. The paraffin tank has a capacity of about 19 gallons. The radiator is of the tubular type with fins, and a thermostatic valve is fitted between the motor and the radiator. The capacity of the tank and radiator is 8 gallons of water. The front wheels are 34 in. diameter by 5¾ in. wide, the rear wheels are 50 in. diameter by 12 in. wide, and the wheel-base is 84 in.

There is one brake about 20 in. diameter by 2 in. wide on the intermediate gear, acting on both driving wheels, and it can be operated whether the change gears are in or out of gear. A differential is fitted without differential lock. There are two forward speeds, 2·2 and 2·9 miles per hour, and one reverse of 1¾ miles per hour. The speed change is of the sliding-gear type. Spade lugs, or angle-iron cleats, or both are used.

The ground clearance is 11 in., and the position of the draw-gear pin centre is 16 in. behind the centre of the back axle. The draw-gear is at a fixed height of 16 in. above the ground, and has a lateral adjustment of 12 in. The belt speed is about 2,700 ft. per minute, the pulley being 16 in. diameter by 6¼ in. wide.

The tractor has an overall length of 11 ft. 2 in., an overall width of 5 ft. 3 in. It can turn in a circle about 25 ft. 6 in. diameter, and weighs about 43½ cwt. full and in working order.

FIAT 18–25.

No. 17. Fiat Motors, Ltd.

This tractor is manufactured in Italy, at Turin, for Fiat Motors, Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 900 revolutions per minute and rated at 28·3 h.p. The motor is provided with a governor of the centrifugal type. The clutch is of the multiple disc type. The carburettor is the Fiat patent twin jet. The fuel is paraffin, petrol being used only for starting, and the intake air is cleaned by passing through water. The paraffin tank has a capacity of 14 gallons, the radiator is of the gilled tube type, stated to have a total cooling surface of 31 sq. ft. The capacity of the radiator is 7 gallons, no water tank being fitted. The front wheels are 32 in. diameter by 5 in. wide, the rear wheels are 52 in. diameter by 12 in. wide, and the wheel-base is 69 in.

One metal-to-metal brake is fitted with expanding shoes acting on the drum to which the belt pulley is bolted. The brake is hand-operated, has an inside diameter of 10⅝ in., and the shoes are 2⅝ in. wide. It acts on the road wheels, or on the pulley, through the transmission shaft. There are three speeds forward, 2, 3 and 4 miles per hour approximately, and one reverse of about 2½ miles per hour. The speed change is of the sliding-gear type and a differential gear is fitted. The final drive is through worm-gear. Diagonal strakes of angle-iron are fitted by means of a hook at one end and one bolt at the other for use on the land.

The ground clearance is 15 in., the position of the draw-gear can be varied vertically from a maximum of 27½ in. to a minimum of 15½ in. The plough anchorage is 26 in. behind the centre of the back axle. It has a range of 17 in. lateral adjustment on each side of the centre line. The belt pulley is driven through the change gear, giving a belt speed of about 1,840 ft. per minute on top gear, 1,220 ft. per minute on second gear, and 750 ft. per minute on first speed. The pulley is 13 in. diameter by 6½ in. wide.

The tractor has an overall length of 10 ft., excluding draw-gear, or 10 ft. 11 in., including the draw-gear. It has an overall width of 5 ft. 6 in. It can turn in a circle 26 ft. 8 in. diameter, and weighs approximately 52 cwt. in working order.

MARTIN.

No. 29. Martin's Cultivator Co., Ltd.

This tractor is manufactured in England, at Stamford, by Martin's Cultivator Co., Ltd. It is propelled by a four-cylinder engine with horizontal cylinders running at 900 revolutions per minute and rated at 23·2 h.p. The motor is governed by a centrifugal enclosed governor fitted with an adjustable spring. This spring adjustment is controlled by a lever from the steering column. The clutch is of the cone type, "ferodo-lined," acting on the inside of the engine fly-wheel. A ball-thrust washer takes the thrust of the clutch spring, and flexible couplings allow for the end movement required for operating the clutch. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Holley" type, and no air-cleaner is fitted. The paraffin tank has a capacity of 15 gallons. The radiator is of the gilled tubular type, having a total cooling surface of approximately 38 sq. ft. The capacity of the tank and radiator is 9 gallons of water. The front wheels are 33 in. diameter by 6 in. wide, the back wheels are 51 in. diameter by 10 in. wide, and the wheel-base is 83 in.

The tractor is fitted with two independent brakes: a pedal-operated internal-expanding brake acting on the inside of the driving pulley on the gear-box shaft having two "ferodo-lined" brake shoes, 2 in. wide, the diameter of the brake drum being 16¾ in., and a hand-wheel screw-operated brake acting on the outside of the gear-ring of each rear wheel, and having two "ferodo-lined" shoes 2 in. wide acting on a diameter of 35¼ in.

There are three forward speeds of 1·75, 2·5 and 3·6 miles per hour, and one reverse of 2·2 miles per hour. The speed change is of the sliding-gear type and a differential is fitted without differential lock. Forty detachable spuds are supplied for the rear wheels for field work, and 40 detachable rubber pads (extra) for road work; angle rings are fitted to the front wheels for field work.

The ground clearance is 12½ in. The draw-gear attachment is 14 in. behind the centre of the back axle, and has a range of 9 in. from a minimum height of 18 in. to a maximum of 27 in. It also has a lateral adjustment of 13 in. The belt pulley is driven through the change-gear, giving three speeds clockwise and one contra-clockwise of 2,100, 1,440, 1,035 and 1,300 ft. per minute respectively. The belt pulley is 18 in. diameter by 6 in. wide. Hauling gear is fitted, having three speeds of 23, 32 and 47 revolutions per minute for normal engine revolutions, the hauling-gear drum being 6½ in. in diameter and the hauling-gear rope ½ in. diameter. It is operated by means of a simple lever.

The tractor has an overall length of 11 ft. 9 in., an overall width of 5 ft. 11 in. It can turn in a circle 30 ft. 6 in. outside diameter, and it weighs approximately 52 cwt. in working order.

E. B. (EMERSON BRANTINGHAM).

No. 32 MELCHIOR, ARMSTRONG & DESSAU.

This tractor is manufactured in the United States of America by Emerson Brantingham, at Rockford, Ill. It is propelled by a four-cylinder engine with horizontal cylinders running at 900 revolutions per minute and rated at 26·4 h.p. The motor is governed by a horizontal centrifugal governor driven by the camshaft and controlling a butterfly throttle. The clutch is of the cone type "ferodo-lined" with ball-thrust bearings and with a "ferodo-lined" spring stop. The fuel is paraffin, petrol being used only for starting. An arrangement is fitted for water injection, but is seldom used in this country. The carburettor is of the "Stormberg" type with hot-spot manifold, and the intake air is cleaned through a "Bennett Dry Vortex" air-cleaner. The paraffin tank has a capacity of 16 gallons. The radiator is of the honeycomb type about 2 ft. 6 in. square, and the total water capacity of tank and radiator is 7 gallons. The front wheels are 36 in. diameter by 6 in. wide, the rear wheels are 54 in. diameter by 12 in wide, and the wheel-base is 87 in.

There is one band brake, "ferodo-lined," pedal-operated, 5 in. diameter with 3 in. face, adjustable and acting on the final-drive shaft to the driving pinions. There are two forward speeds of about 1·8 and 2·3 miles per hour, and one reverse of 1·8 miles per hour. The speed change is of the sliding-gear type, and a differential without differential lock is fitted. Angle-steel spuds, 2 in. by 3 in., extending 3 in. over the wheel, are fitted. No hauling gear is provided.

The ground clearance is 12 in., and there is a vertical adjustment of the draw-gear of 4 in. from a maximum of 16 in. to a minimum of 12 in. There is a lateral adjustment of 15 in. The draw-bar pulls from a point 2 in. in front of the back axle centre The belt speed is about 2,800 ft. per minute, the belt pulley being 12 in. diameter by 6¾ in. wide.

The tractor has an overall length of 11 ft. 1 in., an overall width of 4 ft. 7 in. It can turn in a circle 28 ft. outside diameter, and it weighs approximately 44 cwt. in working order.

G. O. (GENERAL ORDNANCE).

No. 34. Noyes, Stockwell & Co.

This tractor is manufactured in the United States of America by the General Ordnance Co , of Derby, Conn., and Cedar Rapids, Iowa. It is propelled by a four-cylinder engine with vertical cylinders running at 955 revolutions per minute and rated at 28·9 h.p. The motor is governed by a "Waukesha" centrifugal governor actuating the butterfly throttle. The drive is by friction disc, a fibre wheel being brought into contact with one or other of two steel discs mounted on a cross shaft. There are six changes of speed, ranging from 2 to 4 miles per hour in forward gear and the same in reverse. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Kingston" paraffin type, and water to the extent of 1 part in 20 is injected with the fuel. The intake air is cleaned by passing through a "Bennett" cleaner. The paraffin tank has a capacity of 20 gallons. The radiator is of the "Perfex" type, having about 70 sq. ft. of cooling surface. The water capacity, including the radiator, is about 5¼ gallons. The front wheels are 31 in. diameter by 5½ in. wide, the rear wheels are 46 in. diameter by 10 in. wide, and the wheel-base is 86 in.

There are two independent foot brakes of the band type, acting on drums 10 in. diameter by 2 in. wide, on each side of the differential; no differential lock is fitted. Angle spuds, 3 in. by 2 in. by 18 in., are fitted. There is no hauling gear. The ground clearance is large, 18 in., and the distance of the draw-gear centre behind the back axle centre 24 in. There is no vertical adjustment to the draw-gear, but large lateral adjustment of 30 in. in all. The normal belt speed is about 2,400 ft. per minute, the pulley being 10 in. in diameter by 6 in wide.

The tractor has an overall length of 10 ft., an overall width of 5 ft. 1 in. It can turn in a circle about 22 ft. 6 in. outside diameter, and it weighs approximately 39¾ cwt. full and in working order.

PETERBRO.'

No 36 PETER BROTHERHOOD, LTD. (Figs 6 & 8).

This tractor is manufactured in England, at Peterborough, by Peter Brotherhood, Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 900 revolutions per minute and rated at 29·0 h.p. The motor is governed by a centrifugal governor acting on a butterfly throttle valve. The clutch is of the cone type with "ferodo-lining." The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Zenith" type, and no water is injected with the fuel. The intake air is cleaned by passing through a gauze strainer situated in a protected position under the bonnet. The paraffin tank has a capacity of 18 gallons. The radiator is of the gilled-tube type and has an area of about 17·5 sq. ft. of cooling surface. The total capacity of water tank and radiator is 8½ gallons. The front wheels are 36 in. diameter by 6 in. wide, the rear wheels are 54 in. diameter by 10 in. wide, and the wheel-base is 87 in.

There is one brake of the band type with "ferodo-lining" acting on a drum 5¼ in. diameter by 2½ in. wide on the end of the second-motion shaft. There are two forward speeds, 1⅞ and 2½ miles per hour respectively, and one reverse, 1½ mile per hour. The speed change is of the sliding-gear type, and a differential is fitted without differential lock. The final drive is through a pinion and ring. Deep angle-iron spuds are supplied for land work, and rubbers (extra) can be fitted for road haulage.

Good ground clearance, 12 in., is provided. The height of the draw-gear can be adjusted from a maximum of 18 in. to a minimum of 10 in. The distance of the draw-gear pin centre behind the back axle centre is 24 in., and the draw-gear has a lateral adjustment of 6 in. on either side of the centre line. The belt speed is about 2,800 ft. per minute, the pulley being 12 in diameter by 5½ in. wide.

Special attention has been paid to the design and construction of the motor, the piston and cylinders being so arranged as to prevent leakage of unvaporised paraffin past the pistons into the crank chamber. This prevents pollution of the lubricating oil and tends to economy in the combined cost of fuel and lubricating oil.

The tractor has an overall length of 11 ft, an overall width of 5 ft. It can turn in a circle of 37 ft. outside diameter, and it weighs approximately 50½ cwt. in working order.

PICK.

No. 37. Pick Motor Co., Stamford.

This tractor is made in England, at Stamford, at the works of the Pick Motor Co. It is driven by a four-cylinder motor running at 800 revolutions per minute and rated at 21 0 h.p. The clutch is of the cone type. The normal fuel is paraffin, petrol being used for starting, but petrol only was used on the trial. The capacity of the paraffin tank is 8 gallons, and that of the water tank is 5 gallons. The front wheels are 36 in. diameter by 5 in. wide, and the rear wheels are 48 in. diameter by 12 in wide.

There are two brakes of the expanding type.

There are three forward speeds of 5·1, 2·6 and 1·7 miles per hour, and a reverse The speed change is of the sliding-gear type. The height of the draw-gear can be varied from a maximum of 24 in. to a minimum of 10 in. The weight of the tractor complete and in running order is about 40 cwt.

SAUNDERSON UNIVERSAL "G."

No. 41. Saunderson Tractor & Implement Co., Ltd.

This tractor is manufactured in England, at Bedford, by the Saunderson Tractor & Implement Co., Ltd. It is propelled by a two-cylinder engine with vertical cylinders running at a speed of 750 revolutions per minute and rated at 23·6 h.p. The motor is governed by a centrifugal governor acting on the throttle. The clutch is of the cone type with leather face. The fuel is paraffin, petrol being used only for starting. The carburettor is of the firm's own make, and the intake air is cleaned by passing through a gauze filter. The paraffin tank has a capacity of 10 gallons. The radiator is of the film type stated to be of 115 sq. ft. area of cooling surface, and the total water capacity of the tank and radiator is 17 gallons. The front wheels are

30 in. diameter by 6 in. wide, the rear wheels are 48 in. diameter by 10 in. wide, and the wheel-base is 90 in.

There are two brakes, an internal-expanding shoe brake on the gear shaft acting on both rear wheels, and a hand contracting band brake acting on the differential drum and consequently on both wheels. There are three forward speeds, 1⅝, 2⅛ and 4¼ miles per hour, and one reverse of 2⅛ miles per hour. The speed change is of the sliding-gear type, and a differential is fitted without lock. Angle-section spuds are supplied and also angle-section overhanging biters.

There is large ground clearance, 18 in.; the height of the draw-gear can be varied from a maximum of 26½ in. to a minimum of 16½ in., the distance of the draw-gear pin centre behind the back axle centre is 36 in., so that the risk of capsizing by rearing is minimised. There is a lateral adjustment of the draw-gear of 21 in. in all. The belt speed is about 2,450 ft. per minute, the pulley being 12 in. diameter by 7 in. wide. The belt pulley can be made fast or loose by means of the clutch. The tractor is carried on three-point suspension.

The tractor has an overall length of 12 ft., an overall width of 5 ft. 6 in. It can turn in a circle 36 ft. outside diameter, and it weighs approximately 52 cwt. in working order.

GLASGOW.

No. 45. Wallace (Glasgow), Ltd.

This tractor is manufactured in Scotland, at Glasgow, by Wallace (Glasgow), Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 1,150 revolutions per minute and rated at 26·7 h.p. The motor is provided with a governor of the "Pickering" type, supplied by the Pierce Governor Co., of America. The clutch is of the steel cone type, "ferodo-faced." The fuel is paraffin, petrol being used for starting. The carburettor is of the "Zephyr" central jet type, and the intake air is cleaned by being passed through removable wire gauze filters. The paraffin tank has a capacity of 14 gallons, the radiator is of the gilled-tube type stated to be about 14 sq. ft. area. The total capacity of water tank and radiator is 8 gallons.

The tractor has three wheels, all 39 in. diameter and all driven, the two front wheels are 8 in. wide and are driven through ratchets, so that on a straight course all three wheels drive as though solidly connected. The arrangement is such that when turning, the front wheel, which is on the inner track, describes the same path as the rear wheel, and the outer front wheel is enabled to overrun by its ratchet gear. The wheel-base is 75 in.

One pedal-operated brake of the cast-iron expanding internal-shoe type, 9 in. in diameter by 1⅝ in. wide, is fitted on the side shaft. The shaft runs at 87 revolutions per minute on the low gear and at 140 revolutions per minute on the high gear. There are two forward speeds, 2½ and 4½ miles per hour, and one reverse speed of 2¾ miles per hour. The speed change is of the sliding-gear type and there is no differential gear. A gear is fitted for lowering one of the front wheels, the amount of tilt being regulated by an adjusting screw between the frame and axle. Cast-iron spuds, 3 in. and 4 in. long, of the spade type, with curved flanks to ensure a clean entrance to and exit from the soil, are provided.

The ground clearance is 14 in. The height of the draw-gear above the ground can be varied from 12 in. maximum to 9 in. minimum, and the distance of the draw-gear pin centre behind the back axle centre is 27 in., so that there is no risk of capsizing by rearing. The draw-gear has a lateral adjustment of 10 in. The belt speed is about 2,600 ft. per minute, the pulley being 9 in. diameter by 5 in. wide.

The tractor has an overall length of 11 ft. 4 in., an overall width of 5 ft. It can turn in a circle 36 ft. outside diameter, and it weighs approximately 37½ cwt. in full working order.

NEW SIMPLEX.

No. 46. W. Weeks & Son, Ltd.

This tractor is manufactured in England, at Maidstone, by W. Weeks & Son, Ltd. It is propelled by a four-cylinder engine with vertical cylinders running at 900 revolutions per minute and rated at 24·3 h p The motor is provided with a governor of the centrifugal type carried on the camshaft gear, totally enclosed and acting on the throttle valve in the induction manifold. The clutch is of the dry multi-disc type. The fuel is paraffin, petrol being used only for starting. The carburettor is of the "Zenith" type with Weeks' patent vaporiser. The intake air is cleaned dry. The paraffin tank has a capacity of 5 gallons, the radiator is of the tube type, having a total area of cooling surface of about 79 sq. ft. The tank capacity, including radiator, is 5 gallons of water. The front wheels are 30 in. diameter by 5 in. wide, the rear wheels are 40 in. diameter by 10 in. wide, which can be increased to 14½ in. by using extension rims, and the wheel-base is 72 in.

There is one band brake 6 in. in diameter by 2 in. wide on the cardan shaft, and, when the tractor is supplied with rubber-tyred wheels for road hauling, two band brakes on drums on each rear wheel, 24 in. diameter by 2 in. face, operated by screw-gear, are fitted. There are three forward gears, 1½, 2½ and 4¼ miles per hour, and one reverse of 1¼ mile per hour. The speed change is of the sliding-gear type, and a differential is fitted with a differential lock. The final drive is through a pinion and gear ring. Cast-iron spuds and angle strakes are supplied with each tractor.

Ground clearance of 12 in. is provided; the position of the draw-gear pin is well to the rear, being 27 in. behind the centre of the back axle. It is provided with a range of 8 in. vertical adjustment from 20 in. maximum to 12 in. minimum, and has a lateral adjustment of 20 in. The belt speed is 2,350 ft. per minute, the pulley being 10 in. diameter by 6 in. wide. An 8 in. pulley can be supplied alternatively.

The tractor has an overall length of 8 ft. 6 in., an overall width of 4 ft., or 4 ft. 9 in. if extension rims are fitted It can turn in a circle 25 ft. 9 in. outside diameter, and it weighs approximately 35 cwt. full and in working order.

CLASS III.

BERNA.

No. 7. Fabrique d'Automobiles Berna, S.A.

This tractor is constructed in Switzerland, at Olten, and is driven by a four-cylinder motor having vertical cylinders, 115 mm. diameter by 160 mm. stroke, running at 1,000 revolutions per minute and rated at 33·5 h.p. The motor is governed by a centrifugal governor entirely enclosed and sealed. It is fitted with a leather cone clutch. The fuel is petrol, and the capacity of the petrol tank is 26 gallons. The radiator is of the honeycomb type, and the contents of the tank, including that of the radiator, are 10 gallons of water. The carburettor is of the "Claudel-Berna" type, without special method for cleansing the intake air. The front wheels are 33 in. diameter by 6 in. wide, the rear wheels are 65 in. diameter by 12 in. wide, and the wheel-base is 120 in. There are two brakes acting on the countershafts, capable of being operated independently to facilitate steering. There are three forward speeds, 1, 2 and 6¼ miles per hour, and one reverse of 1½ mile per hour. The speed change is of the sliding-gear type. There is a differential gear without differential lock.

The ground clearance is 10 in., and the draw-gear pin is 32 in. behind the back axle, minimising risk of capsizing by rearing. It has a vertical adjustment from a maximum of 12 in. to a minimum of 9 in. The lateral adjustment of the draw-gear is 5 in. Cross strakes of angle-iron bent to the form of the flank of a gear tooth are fitted to the back wheels. A capstan gear is fitted, and the tractor can be transformed into a road-tractor by substituting wheels with rubber tyres. The belt speed at normal engine revolutions is 1,000 ft. per minute, the belt pulley being 10 in. diameter by 5 in. wide.

The length of the tractor overall is 14 ft. 5 in., the width overall is 5 ft. 4 in. It is capable of turning in a circle 32 ft. outside diameter, and weighs about 66 cwt. full and in working order.

LAUSON 15-30.

No. 27. The John Lauson Manufacturing Co.

(Figs. 9 & 11).

This tractor is constructed by the John Lauson Mfg. Co., of New Holstein, Wis., in the United States of America. It is propelled by a four-cylinder motor having vertical cylinders running at 950 revolutions per minute and rated at 33·4 h.p. It is fitted with a "Taco" governor of the enclosed centrifugal type mounted on ball-bearings and running in oil. The clutch is of the internal expanding-shoe type, self-locking and easily accessible. The fuel is paraffin, petrol being used only for starting. No water is injected with the fuel. The capacity of the paraffin tank is 23 gallons. The radiator is of the honeycomb type, having 4½ sq. ft. area of cross-section. The capacity of the radiator is 5½ gallons of water. The carburettor is of the "Kingston" paraffin fitted type with "Siphon" air-washer. The front wheels are 36 in. diameter by 6 in. wide, the rear wheels are 54 in. diameter by 12 in. wide, and the wheel-base is 86 in.

There are two foot-operated independent brakes of the internal-expanding type for facilitating turning. A hand-operated brake is also provided, acting on the belt pulley. There are two forward speeds, 1¾ and 2½ miles per hour, and one reverse of 1½ mile per hour. The speed change is of the sliding-gear type. There is a differential with differential lock. The ground clearance is 11½ in., the draw-gear pin centre is 32 in. behind the back axle centre, minimising risk of capsizing by rearing. The draw-gear is fixed at a height of 12 in. and has a lateral adjustment of 27 in. Spuds of pyramid shape are supplied, and also strakes of various patterns. The belt speed at the normal engine revolutions is about 2,350 ft. per minute, the belt pulley being 18 in. diameter by 6 in. wide.

The length of the tractor overall is 11 ft. 4 in., the width overall is 6 ft. 2 in. It is stated to be capable of turning in a circle 20 ft. outside diameter, and its weight is about 62 cwt. full and in working order.

CLASS IV.

MANN STEAM TRACTOR.

No. 28. Mann's Patent Steam Cart & Wagon Co., Ltd.

(Figs. 10 & 12).

This tractor is manufactured at Leeds, in England, by Mann's Patent Steam Cart & Wagon Co., Ltd. It is driven by a two-cylinder compound engine stated to develop 25 b.h.p. when running at 450 revolutions per minute. The governor is of the spring-loaded centrifugal type made by the manufacturers. Change of gear is effected by means of a sliding pinion on the second-motion shaft gearing into wheels of the third-motion shaft. The boiler is of the locomotive type, having 3 sq. ft. grate area and 57·5 sq. ft. total heating surface. There is no superheater; a spark arrester of the wire-cage pattern is supplied on the chimney top, or, if preferred, a perforated plate can be fitted in the smoke-box. The feed is by a slow-speed plunger pump running at about one-third of the engine speed and also by a "Penberthy" injector. Coal is used as fuel, the capacity of the bunker being 3 cwt. The capacity of the water tank is 200 gallons. Two attendants are required. The front wheels are 35 in. diameter by 8 in. wide, the rear wheels are 51 in. diameter by 20 in. wide, and the wheel-base is 97 in.

There are two brakes: an external-contracting band acting on a drum on the rear axle 25 in. diameter by 3 in. wide; and a combined steam brake and reversing gear.

The ground clearance is 9 in., the distance of the draw-gear pin behind the centre of the back axle is 30 in. The height of the draw-gear is fixed at 19 in. above the ground, but it has a lateral adjustment of 30 in. There are three forward speeds, 2¼, 3½ and 5 miles per hour at normal engine speed, and the same in reverse. Strakes set diagonally on the wheels, 3½ in. wide, with a 2¼ in. space between, are used, as well as 12 spade-shaped spuds on each rear wheel. The front wheels are fitted with angle-iron bands. Hauling gear is fitted, the drum diameter being 19½ in. and the diameter of the hauling rope ½ in. The drum makes 29, 46 or 66 revolutions per minute at normal engine speed, according to the gear engaged, equivalent to 150, 235 or 340 ft. per minute.

The length of the tractor overall is 13 ft. 5 in., the width of the tractor overall is 5 ft. 10 in. It is stated to be capable of turning in a circle 24 ft. outside diameter. The load on the front wheels at rest is about 1 ton 11 cwt., and on the back wheels 3 tons 17 cwt. The total weight is about 5 tons 8 cwt. full and in working order. The tractor is mounted on springs to conform with the Heavy Motor Cars Act.

CLASS V.

FOWLER MOTOR CABLE PLOUGH.

No. 20. JOHN FOWLER & CO. (LEEDS), LTD. (Figs. 13 & 15).

This cable ploughing machine is manufactured at Leeds, in England, by John Fowler & Co. (Leeds), Ltd. Two machines are used; each is driven by a four-cylinder White & Poppe engine running at 1,000 revolutions per minute and rated at 46·0 h.p. The motor is governed by an enclosed centrifugal governor acting on a separate throttle valve in the induction pipe. The clutch is of the double-plate pattern, with "ferodo" and metal surfaces. The ploughing gear gives two speeds of 2⅛ and 3¼ miles per hour on the cable, and there are two road speeds the same as these, on either forward or reverse. The fuel is petrol or benzol, and the tank capacity is 42 gallons. The lubricating oil tank holds 7·5 gallons, and the water tank and radiator together hold 8 75 gallons of water. The front wheels are 42 in. diameter by 9 in. wide, the rear wheels are 66 in diameter by 16 in. wide, and the wheel-base is 147 in.

The change gear is of the epicyclic type. There are two brakes, one on the cardan shaft on a drum 10 in. diameter by 2½ in. wide, and one on the epicyclic gear 19¼ in. diameter by 2½ in. wide. Brakes can also be fitted to the rear wheels. The ground clearance is 15 in.; the draw-gear pin for road haulage is at the height of about 2 ft. 11 in. above the ground.

The ploughing gear is driven by a cable drum 24¼ in. diameter, using special steel 24-wire rope, Lang's lay, ⅝ in. diameter, running at either 3¼ miles per hour or 2⅛ miles per hour, and usually hauling 5 plough-shares. The steering gear is of the "Ackermann" type, controlled by a worm and worm-wheel of 24 to 1 ratio. Reversing can be effected instantaneously by means of the epicyclic gear. The engine is carried on a special spring suspension, and an electrical self-starting gear with dynamo is provided.

The length of the tractor overall is 19 ft. 4 in., the width of the tractor overall is 7 ft. 2 in., the wheel-base is 147 in. It is stated to be capable of turning in a circle 22 ft. outside diameter, and its total weight full and in working order is 8 tons 4 cwt., of which 2 tons 18 cwt. are on the front wheels and 5 tons 6 cwt. are on the back wheels.

McLAREN'S PATENT MOTOR WINDLASS.

No. 31. J. & H. McLAREN, LTD. (Figs. 14 & 16).

This cable ploughing machine is manufactured at Leeds, in England, by Messrs. J. & H. McLaren, Ltd. Two machines are used; each is driven by a four-cylinder engine running at 1,000 revolutions per minute and rated at 32·0 h.p. The motor is governed by a centrifugal governor acting on the throttle valve in the induction pipe. The clutch is of the cone type, "ferodo-lined," engaging with the fly-wheel. The change gear is of the sliding type, and gives three speeds, 1·57, 1·86 and 2·91 miles per hour on the road, and there are two ploughing speeds of 3 and 3·6 miles per hour. A differential is fitted without differential lock. The fuel is paraffin, petrol being used only for starting. The capacity of the paraffin tank is 28 gallons. The water tank and radiator together hold 10 gallons. The front wheels are 33 in. diameter by 9 in. wide, the rear wheels are 42 in. diameter by 9 in. wide, and the wheel-base is 120 in.

The brakes are as follows: road gear, a "ferodo-lined" strap brake 9 in. diameter by 1½ in. wide, acting on the worm spindle which gears with the worm-wheel on the main axle; ploughing gear, a "ferodo-lined" pad brake 1 ft. 6 in. long by 2 in. wide, acting on the inside of the winding drum (3 ft. 3½ in. diameter). The ground clearance is 9½ in. The ploughing gear is driven by a cable coiled on a drum 30 in. diameter, using $\frac{7}{16}$ in. diameter cable, four strands of five wires each, plough steel wire.

The length of the tractor overall is 16 ft. 4 in., the width of the tractor overall is 6 ft. 6 in. It turns in a circle about 42 ft. outside diameter, and its total weight full and in working order is about 3 tons 14 cwt., of which about 1 ton is on the front wheels and 2 tons 14 cwt. on the back wheels.

CLASS VI.

FOWLER, CLASS "DD," STEAM CABLE PLOUGH.

No. 21. John Fowler & Co. (Leeds), Ltd. (Figs. 17 & 18).

This cable ploughing engine is manufactured at Leeds, in England, by John Fowler & Co. (Leeds), Ltd. It is driven by an 8 h.p. (nominal) steam engine, having one cylinder 8 in. diameter by 12 in. stroke, running at 300 revolutions per minute, and fitted with a "Fowler" high-speed centrifugal governor. The ploughing gear gives one speed of 3·75 miles per hour at normal engine speed. The boiler is of the locomotive type, having 4·3 sq. ft. grate area and 111 sq. ft. heating surface. It is fitted with a superheater 47·7 sq. ft. area of heating surface, and has a spark arrester of the grid type. The coal-carrying capacity of the bunker is 500 lb., and the capacity of the water tank is 136 gallons; the feed is by a plunger pump, or size C "Penberthy" injector. The front wheels are 48 in. diameter by 9 in. wide, and the rear wheels 72 in. diameter by 16 in. wide, and the wheel-base is 147 in.

The change gear is of the sliding-gear type, and gives two road speeds of 2·5 and 4·9 miles per hour respectively. There is no brake, but the regulator and reversing gear provide the equivalent. The ground clearance is 13 in., and the draw gear pin for road haulage is at the height of 2 ft. 9 in.

The ploughing gear is driven by a cable drum 24¼ in. diameter, using special steel 24-wire cable, Lang's lay, ⅝ in. diameter, running at 3·75 miles per hour, and usually hauling 5 ploughshares. Steering is by worm and wheel with chains.

The length of the tractor overall is 20 ft. 2 in., the width of the tractor overall is 6 ft. 8¼ in., and it is capable of turning in a circle 39 ft. outside diameter. Its total weight full and in working order is 11 tons 19¾ cwt., of which about 3 tons 9 cwt. is on the front wheels, and 8 tons 11 cwt. on the rear wheels.

CLASS VII.

CRAWLEY.

No. 15. CRAWLEY AGRIMOTOR CO., LTD. (Figs. 19 & 20).

This combined motor and plough is made in England by the Crawley Agrimotor Co., Ltd., at Saffron Walden. It is driven by a four-cylinder motor, having vertical cylinders running at 1,000 revolutions per minute and rated at 24·3 h.p. The motor is governed by a centrifugal governor of original and simple type, self-contained and totally enclosed. The clutch is of the cone type, "ferodo-lined" and hand-controlled. The fuel is paraffin, petrol being used for starting. The capacity of the paraffin tank is 8 gallons. The radiator is of the gilled-tube type with cast tanks, and the total water capacity of the tank and radiator is 12 gallons. The carburettor is of the "Degory No-Jet" type. No special provision is made for cleaning the intake air. There are two front wheels driving the tractor, each 48 in. diameter by 8 in. wide. No differential is fitted, but a special device for declutching either wheel is used in place of the differential for turning. A hand-wheel operating a pinion and rack slides the rear wheel across the rear of the frame for fine adjustment of steering when ploughing.

There is one brake of the cone type, "ferodo" lined, hand-controlled and acting on the propeller shaft. The front of the tractor is so constructed that the machine cannot be capsized forward by rearing when the brake is applied suddenly, even though the ploughs should be lifted clear of the ground. There are two speeds forward, 2½ miles per hour and 3¾ miles per hour respectively, and one reverse of 1¼ miles per hour. The change speed is of the sliding-gear type.

The ploughs are of the Crawley Agrimotor Co.'s C.P. type, three furrows, slung under the frame of the machine. The tractor can pull a Martin or Ransome cultivator slung under the frame of the machine, or hauled when the machine has been converted into a tractor. A special frame and wheel can be fitted in front for converting the self-contained machine into a tractor, and in this form it can be used for hauling a reaper and binder. The belt speed can be alternatively either 1,830 or 1,420 ft. per minute, according to the gear fitted, the belt pulley being 14 in. diameter by 6 in. wide. The ground clearance is 10½ in.

The length of the tractor overall is 17 ft. 6 in., the width of the tractor overall is 5 ft. 2 in. It can be turned in a circle 24 ft. outside diameter, and its weight full and in working order is 46½ cwt. The use of the declutching gear in conjunction with the reduction of load on the rear wheel when in reverse gear enables the rear of the tractor to be lifted easily clear of the ground and turned round the declutched wheel. When converted to a tractor the machine can be turned so as to cut a square corner with a binder.

FOWLER "20" MOTOR PLOUGH.

No. 22. John Fowler & Co. (Leeds), Ltd.

This combined motor and plough is made in England by John Fowler & Co. (Leeds), Ltd., at Leeds. It is driven by a four-cylinder "Waukesha" motor with vertical cylinders running at 1,100 revolutions per minute and rated at 21·1 h.p. The motor is governed by a ball-type, totally-enclosed governor. The clutch is of the plate pattern "Borg & Beck" type. The fuel is petrol or benzol, the capacity of the petrol tank being about 10½ gallons. The radiator is of the spiral tube pattern about 53 sq. ft. area, and the capacity of tank and radiator is 5·75 gallons of water. The carburettor is of the "Zenith" type, and the intake air passes through a "Willcox-Bennett" air-cleaner. There are two front wheels driving the tractor, each 53 in. diameter by 8 in. wide. A differential gear is fitted, and also a differential lock. Steering is effected by brakes on the cross shaft or, while ploughing, by a bevel gear and worm operating on the plough frame. There is a screw arrangement for lifting or lowering either front wheel so that the plough will ride level under all circumstances. There are two brakes independently operated by foot, one on each wheel, 14¾ in. diameter by 1½ in. wide.

The two-share ploughs are of Fowler's make, attached by a draw-pin and having two horizontal rollers in the rear. The tractor can pull a Fowler cultivator in place of the ploughs. For other use the plough bodies and the rear of the frame are detached. Two wheels, operated by hand steerage, are then attached, making the machine into a four-wheeled tractor.

The ground clearance when ploughing is 8 in. The belt speed is 2,300 ft. per minute, the belt pulley being 8 in. diameter by 4¾ in. wide. There are two forward speeds, 1·9 and 3·1 miles per hour respectively, and one reverse, 1·7 miles per hour at normal engine revolutions. The speed change is of the sliding-gear type.

The length of the tractor overall with the plough is about 17 ft. 2 in., the width overall is 4 ft. 3¾ in., and it is stated to turn in a circle of 16 ft. outside diameter. The weight of the tractor with the plough is about 41 cwt. full and in working order.

MARTIN 3-FURROW MOTOR PLOUGH.

No. 30. MARTIN'S CULTIVATOR CO., LTD.

This combined motor and plough is made in England, at Stamford, by Martin's Cultivator Co., Ltd. It is driven by a four-cylinder motor having vertical cylinders running at 900 revolutions per minute and rated at 23·2 h.p. The motor is governed by a centrifugal enclosed governor fitted with an adjustable spring and controlled by a lever from the steering column. The clutch is "ferodo" lined, and acts on the inside of the engine fly-wheel. A ball-thrust washer takes the thrust of the clutch spring, and flexible couplings allow for the end movement required for operating the clutch. The fuel is paraffin, petrol being used only for starting, and there is no water injection. The capacity of the paraffin tank is 7¾ gallons. The radiator is of the gilled-tube type, having about 38 square ft. of cooling surface, and the capacity of tank and radiator is 9 gallons of water. The carburettor is of the "Holley" type, without air-cleaner. The tractor is supported at the front by two chain tracks, each 8 in. wide, and having a length of bearing on the ground of 3 ft. 4 in. The area in contact with the ground is 320 square in. for each track, or a total of 640 square in.

The length of the tractor, with plough, overall is 18 ft., the width overall is 4 ft. 8 in. It can turn in a circle about 20 ft. outside diameter, and its weight full and in working order is about 40 cwt. The track shoes are fitted with detachable spuds capable of being fastened each by a single bolt and nut. There is one speed forward of 1·6 miles per hour, and the same in reverse. The change speed is of the sliding-gear type.

When the ploughs are in work steering is effected by hand-wheel and worm-gear. When the ploughs are out of work steering is controlled by side clutches operated by a hand-lever. A screw-gear is fitted for adjusting the relative heights of the chain tracks to suit the depth of ploughing. There is no differential. There are two shoe-brakes 8 in. diameter, pedal-operated, acting on both chain-track driving sprockets. There is a screw-gear adjustment vertically and also laterally for the draw-gear.

The ploughs are of the three-furrow Martin type, with simple attachments to the self-lift and steering mechanism. A Martin self-lift tractor cultivator can be attached to the tractor in place of the plough. Binders, harrows, mowers or other implements can be drawn coupled to the tractor attachment.

The ground clearance is 13 in. The belt speed is 420 ft. per minute, the belt pulley being 18 in. diameter by 6 in. wide.

MOLINE.

No. 33. Motrac Engineering, Ltd. (Figs. 21 & 22).

This combined motor and plough is manufactured at Moline, Ill., in the United States of America. It is driven by a four-cylinder motor having vertical cylinders running at 1,300 revolutions per minute and rated at 20·7 h.p. It is governed by a magnetic plunger governor working in a dash-pot with oil. "Remy" ignition is fitted with "Willard" accumulators and a self-starter.

The clutch is of the "Borg & Beck" dry-plate type, raybestos to steel The carburettor is of the "Ensign Paraffin" type. The fuel is paraffin, petrol being used for starting. The capacity of the paraffin tank is 12 gallons. The radiator is of the "Modine-Spirex" type, the intake air being passed through a "Bennett" dry air-cleaner, and the capacity of the tank and radiator is 4 gallons of water.

The front driving wheels are 52 in. diameter by 8 in. wide, or with extension rims 14 in. wide. There is one forward speed of 2 to 5 miles per hour, regulated by the engine speed, and there is one reverse speed of 1 to 3 miles per hour. There are two hand-brakes 9 in. diameter, raybestos-lined acting on the differential shafts. A differential lock is fitted.

The plough is of the "Moline" three-furrow type, secured by three detachable pins. Any type of cultivator or any make of binder can be attached in the same manner by three detachable pins, the tractor being arranged with rear carriage fittings and two detachable pins, and with an extension for the gear, clutch and steering controls

The belt speed is 2,580 ft per minute, the belt pulley being 9 in. diameter by 6½ in wide. There is a gear for raising and lowering one wheel by means of a ratchet catch and an adjusting arm lowered by the weight of the tractor and raised by the power of the engine. Steering is by rack and pinion. The ground clearance is 29 in.

The length of the tractor overall, without the plough, is 5 ft. 6 in., and the width of the tractor overall is 4 ft. 6 in. It is capable of turning in a circle 32 ft. outside diameter, and the total weight of the tractor with plough is 39¼ cwt. full and in working order.

BOON.

No. 38. Ransomes, Sims & Jefferies, Ltd.

This combined tractor and plough is manufactured in England, at Ipswich, by Ransomes, Sims & Jefferies, Ltd. It is driven by a two-cylinder motor having vertical cylinders running at 800 revolutions per minute and rated at 20·0 h.p. It is governed by a centrifugal governor driven by spiral gears from the camshaft and operating on the throttle. The clutch is of the internal cone type, lined with ferodo. The fuel is paraffin, petrol being used only for starting. The capacity of the paraffin tank is 10 gallons. The radiator is of the gilled-tube type, having about 90 square ft. of total surface, and the capacity of the tank and radiator is 10 gallons of water. The carburettor is of the "Zenith" type, and the intake air is filtered through fine copper gauze. The two front (driving) wheels are 52 in. diameter by a normal width of 9 in., but capable of being increased to 15 in. by extensions.

There are two brakes fitted to the hubs of the driving front wheels, 18 in. diameter by 2½ in. wide, with "ferodo" lined bands, operated by foot. There are two forward speeds, 2·1 and 2·7 miles per hour, and one reverse speed of 1·9 miles per hour. There is a differential gear, but no differential lock. Steering is effected by a hand-wheel acting through a worm and wheel on a wheel and rack.

The plough is a three-furrow Ransomes, Sims & Jefferies, bolted to the under-carriage in such manner as to allow of sideway adjustment and of depth adjustment. It is fitted with a self-lifting device. A Ransomes nine or eleven tines self-lift cultivator can be bolted to the under-carriage. The plough can be detached by removing six bolts. The tractor is then ready for the road. The under-carriage carries the back wheels, which are the furrow and land wheels when ploughing. The ground clearance is 13 in. The belt speed may be either 2,200 ft. per minute or 1,880 ft. per minute, the belt pulley being either 10½ in. diameter by 5 in. wide, or 9 in. diameter by 6 in. wide, respectively.

The length of the tractor overall is 14 ft., or with the plough 16 ft., the normal width overall is 5 ft. 4½ in., or with the extensions 6 ft. 4½ in. It is capable of turning in a circle 24 ft. outside diameter, and the weight is about 52 cwt. full and in working order.

SANTLER.

No. 39. C. Santler & Co., Ltd.

This combined tractor and plough is a double-ended machine operated by two attendants and ploughing two furrows. It is driven by a two-cylinder engine running at a normal speed of 800 revolutions per minute and rated at 15·6 h.p. The clutch is of the cone type. The fuel is paraffin, petrol being used only for starting. The capacity of the paraffin tank is 5 gallons. The driving wheels are 50 in. diameter by 9 in. wide, and 50 in. diameter by 12 in. wide, respectively, with steering wheels 24 in. diameter by 6 in. wide. The machine is reversed at each end of the field, and driven by the other attendant in the opposite direction without turning.

There is one brake of the band type. The front wheel is spring mounted. There are two speeds; the speed change is of the sliding-gear type. The weight of the machine in working order is about 49 cwt., of which about 41 cwt. is on the driving wheels and 8 cwt. on the steering wheel.

JUDGES' REPORT.

The comparing of the performance of agricultural tractors is a much more complex matter than that of tractors intended primarily for use on the road. The latter are designed, usually, for a single purpose, and although required to negotiate gradients as steep as 1 in 4 and to run in all weather conditions over both good and poor roads, they are not expected to perform the various duties required of the farm tractor. This comparatively new class of vehicle must be capable of running not only on a hard road, but on soft land; it must be able to do the work of the horse in ploughing, cultivating, harrowing and harvesting, and to replace the hired portable engine in the operations of threshing and driving barn machinery, and occasionally also to serve as a tractor for hauling a loaded wagon or farm implement from place to place. Furthermore, it may be used in remote parts of the country, often far from well-equipped workshops, and it must be driven by ordinary farm labour, a large proportion of which is not yet educated in the treatment of a class of machinery essentially different from those agricultural implements with which the farm hand is already familiar. Like the road tractor, it must work in all weathers, but with the additional disadvantage that it must often be left out at night, sheeted down.

When all these diverse conditions have to be met by a class of machine of quite recent development, it is remarkable, and highly creditable to the manufacturers, that of so large a number of entries as forty-six, as many as thirty-eight should have been presented for the trials, and as few as two only should have retired during their progress. This uniformity of excellence very greatly increased the difficulties of judging, and it would have required extreme uniformity in the general conditions of the trials to permit of attempting to arrange the tractors in order of merit, whether for area ploughed per hour, for fuel consumption (or cost of fuel per acre), for drawbar pull, for adaptability to the driving of machinery, or even for mechanical design. In the larger classes several tractors were nearly of equal merit. But, taking into account all the conditions laid down by the Society, there was no difficulty in selecting the prize-winners under these conditions, and the Judges' decisions were unanimous.

Taking the work of Class 2, the largest class (not exceeding 30 h.p., and hauling a three-furrow plough), all possible precautions appeared to have been taken to secure uniformity. The ploughs were all of one pattern, made by an independent manufacturer and adjusted by the firm's own men. The field, which appeared uniform, was of large size, and had been the landing-ground of the aerodrome. Before a start was made on the first day (September 28) a competitor discovered that a compass-ring, a large circle cut in the ground and filled in with clinker and chalk, would come partially into his work, and he was transferred to another plot. Another competitor was less fortunate, for although no trace of its existence was visible on the surface, in the course of his work the plough encountered the remains of a hedge which had been cut down below the level of the field, and filled and levelled carefully so as to ensure the smooth surface required for the landing-ground of an aerodrome. This machine succeeded in making cuts through part of the buried hedge, but when all three ploughshares became engaged with stumps of wood up to 1½ in. diameter it was brought to a standstill. Such instances, of course, were duly allowed for, and had no effect in diminishing the credit due to the competitor. Even in this ideal field some differences in depth of soil were found, and it was not possible to get all the ploughs down to the same depth, because in some parts of the field the depth of ground was not sufficient. Making due allowance for this, the tractive effort required to haul the ploughs varied little over the whole area. All competitors were easily able to perform their work on this field.

On the third day (September 30) the same class was put to work, part on medium land and part on heavy land. None of the tractors had trouble with the medium land, but on the heavy land a new difficulty was encountered. This field was of stiff clay, very heavy, and described as 6-horse. Firstly, it had never been ploughed as deep as it was necessary to go in order to load the tractors fully, and secondly, although in appearance the same, the dynamometer revealed that the mean draw-bar pull for the ploughs varied from 2,300 lb. to 3,400 lb. (770 lb. to 1,130 lb. per share) in different parts of the field. Nor was this all, for an irregular zone of stiffer land ran obliquely across part of the field, affecting only some of the tractors, which were exercising as great a draw-bar pull for two ploughs as other machines were for three furrows in another part of the field.

Conditions were approximately equalized by changing the positions of the tractors from one part of the field to another. When rain had fallen the mean draw-bar pull was reduced by about 15 per cent, because the cutting quality of this particular clay was improved; but the conditions of adhesion became more difficult.

Equivalent Acres.

To compare the figures of fuel consumption, allowing for the inevitable differences in draw-bar pull, it is convenient to assume that a standard draw-bar pull per plough-share is 500 pounds, and then to reduce the observed pull and acres ploughed by this figure. The term "equivalent acres" means, therefore, the number of acres that would have been ploughed if the draw-bar pull had remained constant at 500 pounds per plough-share, estimated from the actual draw-bar pull observed and the actual area ploughed.

In addition, therefore, to the practical information obtained by a comparison of the actual draw-bar pulls and the actual acres ploughed, the Judges had before them figures of comparison calculated to show what the results would have been if the resistance at every plough-share had remained constant at 500 pounds.

Thus in the case of light land taking a minimum draw-bar pull of 670 lb. for two ploughs (335 lb. per plough), the equivalent acre was only two-thirds of the actual acre, whereas in the case of the heavy land having a maximum draw-bar pull of 6,250 lb. for five shares (1,250 lb. per plough), 2½ equivalent acres would have been ploughed for each actual acre. A standard depth was also taken for the furrow. The records of the actual depths ploughed were then examined, and if the mean actual depth over the whole plot exceeded the depth ploughed while the dynamometer record was being obtained, this fact was taken into consideration.

The trials of Class 1 (not exceeding 24 h.p. and hauling a two-furrow plough) on light land, on the second day (September 29), on the aerodrome, showed that all the competitors were easily capable of performing their tasks; but in this case also there was found to be considerable difference in the draw-bar pull, which varied from a minimum of 335 lb. per share to a maximum of 565 lb. per share. Here, again, it was necessary to make allowance for the variation.

The work allotted to Classes 3 and 5 in their respective fields on light land was performed with great ease.

In each of the Classes 4 and 6 there was only one competitor, and therefore it was unnecessary to obtain any comparative figures, the work being performed satisfactorily.

Class 7, working on light land in a grass field near the aerodrome, had generally an easy task, but in this class of self-contained motors and ploughs the ploughs differed, and trouble was experienced in one case in clearing the plough. Owing to the impossibility of inserting the dynamometer between the tractor and the plough no records could be made of the pull required in this class. A competitor in this class retired.

In Classes 1 and 5, working on heavy land, it was necessary to apply corrections for variation in draw-bar pull in the manner already described for Class 2.

In the trial of Class 3, working on heavy land, one of the competing tractors unfortunately got ditched and was unable to complete the task for the day, but it was able subsequently to take part in the road test for hill climbing.

Cost of Ploughing.

These figures have been reduced to cost in pence per acre on a uniform basis of 18*d.* per hour for each attendant.

The results for the ploughing trials have been combined in Table III, which shows the minimum and maximum times taken to plough an acre for each class on each kind of land, as well as the average for the five best examples for each of the classes in which there were as many as five machines competing.

The fuel used has been taken per actual acre ploughed, and where comparisons have been made on the basis of equivalent acres the figures so obtained are also given for minimum and maximum consumption, and for the average of the five best tractors in each class. The prices of paraffin, 1*s.* 11*d.* per British gallon, and petrol, 3*s.* 11*d.*, less 6*d.* excise refund, or 3*s.* 5*d.* net per gallon, have been taken in calculating the costs per actual or equivalent acre. In making any comparison it must be remembered that the figures for equivalent acres reduce the draw-bar pull to that which would be obtained on light land.

The coal used by the tractors in Classes 4 and 6 was supplied at the price of 44*s.* 6*d.* per ton.

The figures for the total costs given in Table III have been taken on the actual acres ploughed, and represent the total per acre for the items of attendant and fuel only, calculated on the net ploughing time, and on the total fuel used.

Miscellaneous Trials.

Uphill ploughing trials were made, on October 4 and 5, with certain selected tractors on hill land that had become wet. In some cases slipping of the wheels or tracks occurred, but not of sufficient amount to prevent any of the tractors from climbing while performing the work.

Brake tests for distance of stopping were made with each of these tractors, with the plough raised, running down the hard, unploughed surface. These trials showed that tractors with small brake power, or even with no brake equipment whatever, could be brought to rest, but the distance required for a stop in the case of a brakeless tractor was very much greater than in the case of those that were equipped with brakes.

Selected tractors were tested for coming into position, putting on the belt and driving a pulley dynamometer. The time was taken from the commencement of the operation of coming into line until 16 h.p. was recorded. The time required by tractors with the fore-and-aft drive, with which the majority were fitted, varied from a minimum of 2 minutes to a maximum of 30 minutes. The tractors fitted with the drive across did not attain either of these figures, taking from a minimum of 3 minutes to a maximum of 12 minutes respectively, and no evidence was obtained as to any material advantage of the one system over the other so far as getting into position was concerned, though the difficulty of tightening the belt drive is, of course, much greater.

The tractors in Classes 1 and 2 were subjected to a test for obtaining the outside diameter of the turning circle. The data obtained varied from a minimum of 13 ft. to a maximum of 36 ft. Ability to turn completely in the headland, and to be able to return down the field in the same line that was taken coming up, would be greatly appreciated by farmers in the operations of drilling, cultivating and harrowing. The nearest approach to this was found in some of the chain-track machines, which were capable of turning in about their own length.

Hill-climbing tests on the road were made, on October 5 and 6, with certain selected tractors hauling a wagon loaded with 4 tons. The point at which the gradient proved too steep for the tractor to negotiate was recorded, and the gradient at this part measured. Five of the tractors succeeded in pulling the full load up a gradient exceeding 1 in 7·4. These trials do not admit of establishing an arrangement in order of merit, because the stoppages were generally not due to stalling of the engines, but to insufficient adhesion. Those tractors that were provided with rubber pads showed the advantage obtained by the increased grip on the road surface.

On October 6, trials were made at the desire of some of the farmers, who had found considerable difficulty in hauling a reaper and binder by a tractor so as to leave the standing corn with a nearly square corner. It was found very difficult to get the drivers to appreciate how they were to deal with the temporary marks put up to represent standing corn, but it was shown generally that those tractors that could turn in a circle of 25 ft. diameter could bring the reaper and binder round so that practically no curve was left by the reaper at the corner. Some difficulties occurred in turning when the draw-gear connection was not placed sufficiently far behind the rear axle, parts of the implement preventing the full lock from being taken.

General Observations.

Of the thirty-six tractors that completed the trials, four were supported on chain-tracks, and in these no case was recorded of jamming by stones or other matter. For work on wet clay, spuds or grousers were used, which could be removed for running on the road.

Among general features it is to be noted that all the American or Canadian tractors used paraffin as fuel. Four tractors of British or Continental manufacture used petrol alone, and two were steam-driven, using coal as fuel.

The preliminary use of petrol for starting was usual in the paraffin motors, and a special heating device, formed as a jacket on the exhaust pipe, was commonly fitted. An impulse starter was generally fitted to the magnetos of the American or Canadian engines. Two tractors were fitted with self-starters, and carried accumulators and electric motors for starting, and another was fitted with a compressed-air starter. None of these devices gave trouble during the trials

Mention may be made of a special feature in the Ricardo engine which was fitted to the Peterbro' tractor, namely, the simple device of turning a small portion of the exhaust gas direct into the carburettor, thereby warming the intake air and (according to certain authorities) diminishing the tendency to "pinking." This enables the engine to run at full load without the necessity of injecting water into the cylinder. Trunk pistons were also fitted to this engine, and in the opinion of the mechanical Judges, the engine stood quite in a class by itself, both as regards novelty and robustness of design.

Mention may be made of a type of carburettor very usual in America, but little known in England, fitted on the self-propelled Moline plough. A small fraction of the fuel oil, probably of the heavier fractions of the paraffin, contained in the incoming air is allowed to trickle unvaporised into a pocket in the carburettor.

In this pocket is a sparking plug which is operated from the Remy ignition. A supplementary supply of air is introduced into this pocket, with the result that there is continual combustion in the pocket of the small fraction of the charge which finds its way there, and the heat produced is used to raise the temperature of the charge and vaporise the fuel. The burnt gas from this small pocket furnace enters the cylinder with the charge.

Owing to the considerable advance in the perfecting of paraffin carburettors, the Judges were agreeably impressed by the absence of smoke clouds either when running under load or when running light. It was quite exceptional, even when reviewing the whole field, to observe such a thing as a really dirty exhaust.

Many of the tractors were fitted with either dry-separators or water-washing arrangements for cleaning the intake air. These cleaners were intended for preventing stoppage or trouble in harvesting, or in doing work under conditions where dust and chaff are liable to be drawn into the induction pipe. As no harvesting trials were made, the efficiency of these appliances could not be compared.

The governors fitted to the engines worked satisfactorily in practically all cases, but circumstances showed that it is necessary that their action should be supplemented by a hand-throttle for enabling the speed to be reduced when turning at the headlands or when manœuvring.

Many of the tractors were fitted with an indicating device to show that the oil-level in the crank case had not fallen below the safe working level, the usual form being a wire connected to a plunger operated by the oil pump and spring controlled.

Boiling of the water in the radiator occurred only in one or two cases.

In a few instances where the wheels came near the frames there was some tendency to clogging, particularly on land foul with grass.

The weather was very wet during the latter days allotted to the ploughing of the heavy land, and the trials were carried on under somewhat unpleasant conditions. Generally, however, we consider the ploughing conditions of the heavy land, though possibly somewhat severe, were quite favourable for a fair trial.

The Judges desire to express their appreciation of the work done by the National Physical Laboratory in producing the Dynamometer used in the trials, and for the valuable help given by Mr. J. H. Hyde and his assistants in working the apparatus and obtaining the records.

The Judges wish to record their thanks to the Observers who carried out their arduous duties under conditions that frequently involved great discomfort and, in several instances, very hard work extending over many consecutive hours.

The Judges desire to express their appreciation of the good services rendered by the Stewards: The Hon. J. E. Cross, Mr. U. Roland Burke and Mr. H. Scott Hall, and by the Staff.

The Judges made the awards as stated on page 6 above.

The Judges give three tables showing :—

I.—An alphabetical arrangement of the names by which the tractors were known, with the numbers and names of Entrants for facilitating reference (p. 45).

II.—Dimensions, rating, speeds, and other makers' particulars furnished by the Entrants, but corrected wherever inaccuracies were found and supplemented (pp. 46 to 55).

III.—Speed of ploughing, fuel consumption and costs per acre (p. 56).

The Judges add the following Appendices : --

I.—Particulars of the ploughs used in the trials.

II.—A description, by Mr. J. H. Hyde, of the dynamometer made by the National Physical Laboratory and used in the trials.

III.—A note giving the views of Mr. Evens, who farms in the Aisthorpe district, and of Mr. Howkins, who has had considerable experience of farming by tractors.

The Judges feel that the R.A.S.E. is much indebted to the Society of Motor Manufacturers and Traders for all the valuable time and work which its members have given in co-operating in the arrangements for carrying out the trials. It is to be hoped that much good has been done to agriculture and to the motor tractor industry by the two Societies working in conjunction with one another.

W. E. Dalby.
F. W. Lanchester.
L. A. Legros.
H. Riall Sankey.
Harry W. Buddicom.
R. M. Greaves.
Bayntun Hippisley.
Dunbar Kelly.
W. R. Fieldsend.
B. Howkins.
Henry Overman.
Fred Scorer.

Judges.

TABLE I: Entrants arranged by usual name alphabetically.

No.	Class	Name of Tractor	Competitor	Maker	Town	Country
5	1	Austin	Austin Motor Co., Ltd.	Austin Motor Co, Ltd.	Birmingham	England
6	2	Austin	Austin Motor Co., Ltd.	Austin Motor Co., Ltd.	Birmingham	England
7	3	Berna	Fabrique d'Automobiles Berna, S.A.	Fabrique d'Automobiles Berna, S.A.	Olten	Switzerland
8	2	Blackstone	Blackstone & Co., Ltd.	Blackstone & Co., Ltd.	Stamford	England
38	7	Boon	Ransomes, Sims & Jefferies, Ltd.	Ransomes, Sims & Jefferies, Ltd.	Ipswich	England
3	1	British Wallis	Ancona Motor Co, Ltd.	Ruston & Hornsby, Ltd.	Lincoln	England
4	2	British Wallis	Ancona Motor Co., Ltd.	Ruston & Hornsby, Ltd.	Lincoln	England
12	1	Case "10–18"	J. I. Case Threshing Machine Co. (F. J. Woodward, Representative)	J. I. Case Threshing Machine Co.	Racine	Wis., U.S.A.
13	2	Case "15–27"	J. I. Case Threshing Machine Co. (F. J. Woodward, Representative).	J. I. Case Threshing Machine Co.	Racine	Wis., U.S.A.
14	2	Chase	Chase Tractors Corporation, Ltd.	Chase Tractors Corporation, Ltd	Toronto	Canada
10	1	Cletrac	H. G. Burford & Co., Ltd.	Cleveland Tractor Co.	Cleveland	Ohio, U.S.A.
11	2	Cletrac	H. G. Burford & Co., Ltd.	Cleveland Tractor Co.	Cleveland	Ohio, U.S.A.
15	7	Crawley	Crawley Agrimotor Co., Ltd.	Crawley Agrimotor Co, Ltd.	Saffron Walden	England
32	2	E–B	Melchior Armstrong & Dessau (London), Ltd.	Emerson Brantingham	Rockford	Ill, U.S.A.
17	2	Fiat	Fiat Motors, Ltd.	F. I. A. T.	Turin	Italy
19	1	Fordson	Henry Ford & Son, Ltd.	Henry Ford & Son, Ltd.	Cork	Ireland
20	5	Fowler Motor Cable	John Fowler & Co. (Leeds), Ltd.	John Fowler & Co. (Leeds), Ltd.	Leeds	England
21	6	Fowler Steam Cable	John Fowler & Co. (Leeds), Ltd.	John Fowler & Co. (Leeds). Ltd.	Leeds	England
22	7	Fowler "20" Motor Plough	John Fowler & Co. (Leeds), Ltd.	John Fowler & Co. (Leeds). Ltd.	Leeds	England
23	1	Garner	Henry Garner, Ltd.	Henry Garner, Ltd.	—	U.S.A.
34	2	G-O	Noyes, Stockwell & Co., Ltd	General Ordnance Co.	Derby Cedar Rapids	Conn. Iowa U.S.A.
45	2	Glasgow	Wallace Farm Implements, Ltd.	Wallace Farm Implements, Ltd.	Glasgow	Scotland
2	2	Hart-Parr "30"	Agricultural Wholesale Society, Ltd. (Coenraad De Waal, Concessionaire)	Hart-Parr Co.	Charles City	Iowa, U.S.A.
27	3	Lauson "15–30"	John Lauson Mfg. Co.	John Lauson Mfg Co.	New Holstein	Wis, U.S.A.
31	5	McLaren Motor Cable	J. & H. McLaren, Ltd.	J. & H. McLaren, Ltd.	Leeds	England
28	4	Mann Steam Tractor	Mann's Patent Steam Cart & Wagon Co., Ltd.	Mann's Patent Steam Cart & Wagon Co, Ltd.	Leeds	England
29	2	Martin Motor Tractor	Martin's Cultivator Co., Ltd.	Martin's Cultivator Co., Ltd.	Stamford	England
30	7	Martin Motor Plough	Martin's Cultivator Co., Ltd.	Martin's Cultivator Co., Ltd.	Stamford	England
33	7	Moline	Motrac Engineering, Ltd.	Moline Plow Co.	Moline	Ill., U.S.A.
46	2	New Simplex	W. Weeks & Son	W. Weeks & Son	Maidstone	England
1	2	Parrett	Agri-Tractor Contract Co., Ltd.	Parrett Tractor Co.	—	U.S.A.
36	2	Peterbro'	Peter Brotherhood, Ltd.	Peter Brotherhood, Ltd.	Peterborough	England
37	2	Pick	Pick Motor Co.	Pick Motor Co.	Stamford	England
24	1	Samson	General Motors, Ltd.	Samson Tractor Co.	Janesville	U.S.A.
39	7	Santler	C. Santler & Co., Ltd.	C. Santler & Co, Ltd.	Malvern Link	England
41	2	Saunderson "G"	Saunderson Tractor & Implement Co., Ltd.	Saunderson Tractor & Implement Co., Ltd.	Bedford	England
42	1	Saunderson Junior	Saunderson Tractor & Implement Co., Ltd.	Saunderson Tractor & Implement Co., Ltd.	Bedford	England
16	2	Twin City	Fairbanks Morse & Co., Ltd.	Minneapolis Steel & Machinery Co	Minneapolis	Minn., U.S.A.

TABLE II (*continued on opposite page*)

WHEELED AND CHAIN-

No.	Name of Competitor.	Name of Tractor.	Country of Origin
	CLASS 1		
3	Ancona Motor Co., Ltd.	British Wallis	England
5	Austin Motor Co., Ltd.	Austin	England
12	J. I. Case Threshing Machine Co	Case "10–18"	U.S.A.
19	Henry Ford & Son, Ltd	Fordson	Ireland
23	Henry Garner, Ltd.	Garner	U.S.A.
24	General Motors, Ltd.	Samson, Model M	U.S.A.
42	Saunderson Tractor and Implement Co., Ltd.	Saunderson Junior	England
	CLASS 2		
1	Agri-tractor Contract Co, Ltd.	Parrett	U.S.A.
2	Agricultural Wholesale Society, Ltd.	Hart-Parr "30"	U.S.A.
4	Ancona Motor Co., Ltd.	British Wallis	England
6	Austin Motor Co., Ltd.	Austin	England
13	J. I. Case Threshing Machine Co.	Case "15-27"	U.S.A.
14	Chase Tractors Corporation, Ltd.	Chase.	Canada
16	Fairbanks, Morse & Co., Ltd.	Twin City	U.S.A.
17	Fiat Motors, Ltd.	Fiat	Italy
29	Martin's Cultivator Co., Ltd.	Martin Tractor	England
32	Melchior, Armstrong & Dessau (Lond.), Ltd.	(E.-B.) Emerson-Brantingham	U.S.A.
34	Noyes, Stockwell & Co., Ltd.	(G.-O.) General Ordnance	U.S.A.
36	Peter Brotherhood, Ltd.	Peterbro'	England
37	Pick Motor Co.	Pick	England
41	Saunderson Tractor and Implement Co., Ltd.	Saunderson, Model G	England
45	Wallace Farm Implements, Ltd.	Glasgow	Scotland
46	W. Weeks & Son	New Simplex	England
	CLASS 3		
7	Fabrique d'Automobiles, Berna, S.A.	Berna	Switzerland
27	John Lauson Manufacturing Co.	Lauson 15–30	U.S.A.
	CLASSES 1 and 2. *Chain-tracks*		
8	Blackstone & Co., Ltd.	Blackstone	England
10 & 11	H. G. Burford & Co., Ltd.	Cletrac	U.S.A.
	CLASS 4		
28	Mann's Patent Steam Cart and Wagon Co., Ltd.	Mann's Light Steam Agricultural Tractor	England
	CLASS 6		
21	John Fowler & Co. (Leeds), Ltd.	Class "DD" Cable Ploughing Engines	England
	CLASS 5		
20	John Fowler & Co. (Leeds), Ltd.	Motor Cable Ploughing Engines	England
31	J. & H. McLaren, Ltd.	McLaren's Patent Motor Windlass	England
	CLASS 7		
15	Crawley Agrimotor Co., Ltd.	Crawley	England
22	John Fowler & Co. (Leeds), Ltd.	Fowler "20" Motor Plough	England
30	Martin's Cultivator Co., Ltd.	Martin 3-Furrow Motor Plough	England
33	Motrac Engineering, Ltd.	Moline Universal	U.S.A.
38	Ransomes, Sims & Jefferies, Ltd.	"Boon" Motor Plough	England
39	C. Santler & Co., Ltd.	Santler	England

Except where otherwise stated the data in this Table are the figures

(*continued on next page*) TABLE II.

TRACK TRACTORS.

Rated Horse Power	No. of Cylinders	Diam. of Cylinders	Stroke	Normal revs. per min.	Governor	Clutch	No.
		in.	in.				
23·6	4	4·25	5·75	875	Auto.	3-disc	3
21·9	4	3·75	5·00	1,200	Auto.	Cone	5
20·5	4	3·875	5·00	1,050	Auto.	Expanding	12
20·8	4	4·00	5·00	1,000	None	17-disc	19
23·2	4	4·25	5·50	900	Auto. Var.	Plate	23
22·0	4	4·00	5·50	1,000	Auto.	19-disc	24
20·0	2	5·00	6·50	950	Auto.	Cone	42
25·8	4	4·25	5·50	1,000	Auto.	3-disc	1
28·8	2	6·50	7·00	750	Auto.	Contracting	2
23·6	4	4·25	5·75	875	Auto.	3-disc	4
27·4	4	3·75	5·00	1,500	Auto.	Cone	6
28·4	4	4·50	6·00	900	Auto.	Expanding	13
24·5	4	4·25	5·50	950	Auto.	Expanding	14
28·1	4	4·25	6·00	1,000	Auto	1-disc	16
28·3	4	*105*	*180*	900	Auto.	Multi-disc	17
23·2	4	4·25	5·50	900	Auto. Var.	Cone	29
26·4	4	4·75	5·00	900	Auto.	Cone	32
28·9	4	4·50	5·75	955	Auto.	Friction	34
29·0	4	4·75	5·50	900	Auto.	Cone	36
21·0	4	4·50	5·00	800	—	Cone	37
23·6	2	5·50	8·00	750	Auto.	Cone	41
26·7	4	4·125	5·25	1,150	Auto.	Cone	45
24·3	4	4·25	5·75	900	Auto.	Disc	46
33·5	4	*115*	*160*	1,000	Auto.	Cone	7
33·4	4	4·75	6·00	950	Auto.	Expanding	27
23·8	3	5·00	6·5	750	Auto. Var.	Cone	8
24·0	4	4·00	5·5	1,000	Auto. Var.	Disc	10& 11
Brake Horse Power						Gear Change	
25	2	4·0 6·375	8·0	150	Auto. spring loaded centrifugal	Sliding pinion	28
	1	8·0	12·0	300	Auto. high speed centrifugal	Sliding gear	21
Rated Horse Power						Clutch	
		mm.	mm.				
46·0	4	127	180	1,000	Auto. encl. centrifugal	2-plate	20
32·0	4	120	140	1,000	Auto. centrifugal	Cone	31
		in.	in.				
24·3	4	4·125	5·25	1,000	Auto. centrifugal	Cone	15
21·1	4	3·75	5·25	1,100	Auto. centrifugal	Dry plate	22
23·2	4	4·25	5·5	900	Auto and control	Cone	30
20·7	4	3·5	5·0	1,300	Magnetic control	Dry plate	33
20·0	2	5·25	7·0	800	Auto. centrifugal	Cone	35
15·6	2	5·0	6·0	800	—	Cone	39

supplied by the Entrants, checked and corrected where errors have been found.

TABLE II (*continued from previous page*).

WHEELED AND CHAIN-

No	Name of Competitor	Tractor Speeds: Forward and Reverse at normal revs.				Gear reduction	
		1st m.p.h.	2nd m.p.h.	3rd m.p.h.	Rev. m.p.h.	1st to 1	2nd to 1
	CLASS 1						
3	Ancona Motor Co., Ltd.	2·5	3·5	—	2·5	52·1	36·1
5	Austin Motor Co., Ltd.	2·45	4·3	—	1·0	60·8	35·0
12	J. I. Case Threshing Machine Co.	2·25	3·5	—		50·0	
19	Henry Ford & Son, Ltd.	1·5	2·75	6·75	2·5	81·3	45·8
23	Henry Garner, Ltd.	1·67	2·67	5·2	1·7	63·7	40·0
24	General Motors, Ltd.	2·0	3·0	– –	1·0	64·0	46·0
42	Saunderson Tractor and Implement Co., Ltd.	1·75	3·0	—	3·0	61·2	37·0
	CLASS 2						
1	Agri-tractor Contract Co., Ltd.	1·75	2·38	4·0	1·8	100·0	76·7
2	Agricultural Wholesale Society, Ltd.	2·0	3·0	—	1·5	58·6	40·1
4	Ancona Motor Co., Ltd.	2·5	3·5	—	2·5	52·1	36·1
6	Austin Motor Co., Ltd.	3·08	5·36	—	2·4	60·8	35·0
13	J. I. Case Threshing Machine Co.	2·25	3·0	—	1·75	62·0	40·0
14	Chase Tractors Corporation, Ltd.	1·50	2·5	—	1·5	91·7	61·3
16	Fairbanks, Morse & Co., Ltd.	2·2	2·0	—	1·75	68·0	51·0
17	Fiat Motors, Ltd.	2·0	3·0	4·0	2·5	74·0	51·0
29	Martin's Cultivator Co., Ltd.	1·75	2·5	3·63	2·25	77·0	55·5
32	Melchior, Armstrong & Dessau (Lond.), Ltd.	1·81	2·33	—	1·81	76·0	60·0
34	Noyes, Stockwell & Co., Ltd.	2–2·4	2·8–3·2	3·6–4	—	–	– –
36	Peter Brotherhood, Ltd.	1·87	2·5	—	1·5	80·0	61·7
37	Pick Motor Co.	—	—	—	—	66·6	43·8
41	Saunderson Tractor and Implement Co., Ltd.	1·63	2·13	4·25	2·12	70·0	40·5
45	Wallace Farm Implements, Ltd.	2·5	4·5	—	2·75	53·0	33·0
46	W. Weeks & Son.	1·5	2·5	4·25	1·25	75·6	42·8
	CLASS 3						
7	Fabrique d'Automobiles, Berna, S.A.	1·0	2·0	6·25	1·5	—	
27	John Lauson Manufacturing Co.	1·75	2·5	—	1·6	90·0	60·0
	CLASSES 1 and 2. *Chain-tracks*						
8	Blackstone & Co., Ltd.	1·86	2·8	3·68	1·5	25·7	17·0
10 & 11	H. G. Burford & Co., Ltd.	2·5–4·0	—	—	1·3–2·0	23·2	– –
		Tractor Speeds.			Gear reduction ratios.		
		Forward	Forward	Reverse	Forward	Forward	Reverse
	CLASS 4						
28	Mann's Patent Steam Cart and Wagon Co., Ltd	2·3	3·5	5·0	30·7	19·3	13·6
	CLASS 6						
21	John Fowler & Co. (Leeds), Ltd.	2·5	1·5		25·8	13·1	
	CLASS 5						
20	John Fowler & Co. (Leeds), Ltd.	2·1	3·3	—	94·2	61·0	
31	J. & H. McLaren, Ltd.	1·57	1·86	2·0	80·0	67·0	43·0
		Forward	Forward	Reverse	Forward	Forward	Reverse
	CLASS 7						
15	Crawley Agrimotor Co., Ltd.	2·5	3·75	1·25	56	41	84
22	John Fowler & Co. (Leeds), Ltd.	1·88	3·1	1·71	94	57	108
30	Martin's Cultivator Co., Ltd.	1·6	—	1·6	11·0	—	11·0
33	Motrac Engineering, Ltd.	2·0	to 5·0	3·0	77	By engine	84
38	Ransomes, Sims & Jefferies, Ltd.	2·14	2·74	1·92	60	47	67
39	C. Santler & Co., Ltd.	—	—	—	25	15	– –

Except where otherwise stated the data in this Table are the figures

(*continued on next page*) TABLE II.

TRACK TRACTORS.

ratios		Fuel used for			
3rd to 1	Rev. to 1	starting	running	Final Drive	No.
—	52·1	Petrol	Paraffin	Worm and wheel	3
—	78·2	Petrol	Paraffin	Spur gear	5
—	—	Petrol	Paraffin	Pinion and ring	12
18·3	47·8	Petrol	Paraffin	Worm and wheel	19
20·3	61·3	Petrol	Paraffin	Worm and wheel	23
—	140·0	Petrol	Paraffin	Pinion and ring	24
—	37·0	Petrol	Paraffin	Pinion and ring	42
45·4	95·0	Petrol	Paraffin	Pinion and ring	1
—	78·4	Petrol	Paraffin	Pinion and ring	2
—	52·1	Petrol	Paraffin	Worm and wheel	4
—	78·2	Petrol	Paraffin	Spur gear	6
—	70·0	Petrol	Paraffin	Pinion and ring	13
—	91·7	Petrol	Paraffin	Pinion and ring	14
—	84·0	Petrol	Paraffin	Pinion and ring	16
33·0	58·0	Petrol	Paraffin	Worm and wheel	17
37·9	60·9	Petrol	Paraffin	Pinion and wheel	29
—	76·0	Petrol	Paraffin	Pinion and ring	32
—	—	Petrol	Paraffin	Pinion and wheel	34
22·5	108·5	Petrol	Paraffin	Pinion and ring	36
24·8	—	Petrol	Petrol	Worm and wheel	37
—	49·5	Petrol	Paraffin	Pinion and ring	41
—	47·0	Petrol	Paraffin	Bevel gear	45
25·2	88·2	Petrol	Paraffin	Pinion and ring	46
—	—	Petrol	Petrol	—	7
—	100·0	Petrol	Paraffin	Pinion and ring	27
13·0	31·7	Paraffin	Paraffin	Pinion and ring	8
—	30·0	Petrol	Paraffin	Pinion and ring	10& 11

	Boiler Details						
Boiler Type	Boiler Pressure lb. per sq. in.	Grate Area sq. ft.	Heating Surface sq. ft.	Super-heater Surface sq. ft.	Pump	Injector	
Locomotive	200	3·0	57·5	None	Slow	Penberthy	28
Locomotive	180	4·3	Total 111	47·7	Plunger	Penberthy	21

Gear Change	Self Starter	Fuel used for starting	Fuel used for running	Final Drive	
Epicyclic	Electric	Petrol	Petrol	Pinion and ring	20
Sliding	—	Petrol	Paraffin	Worm and wheel	31
Sliding	—	Petrol	Paraffin	Pinion and ring	15
Sliding	—	Petrol	Petrol	Pinion and ring	22
Sliding	—	Petrol	Paraffin	Pinion	30
Sliding	Remy	Petrol	Paraffin	Pinion and ring	33
Sliding	—	Petrol	Paraffin	Pinion and ring	38
Sliding	—	Petrol	Paraffin	Pinion and ring	39

supplied by the Entrants, checked and corrected where errors have been found.

TABLE II (*continued from previous page*).

WHEELED AND CHAIN-

No.	Name of Competitor	Belt Drive				
		Direction	Pulley Width	Pulley Dia.	Revs. per min.	Belt Speed ft per min.
	CLASS 1		in.	in.		
3	Ancona Motor Co., Ltd.	With	6·75	18·0	430	2,025
5	Austin Motor Co., Ltd.	With	5·0	24·0	360	2,260
12	J. I. Case Threshing Machine Co.	With	5·25	14·0	1,050	3,915
19	Henry Ford & Son, Ltd.	With	6·5	9·5	1,000	2,480
23	Henry Garner, Ltd.	With	8·25	8·25	900	1,945
24	General Motors, Ltd.	With	6·0	18·0	375	1,770
42	Saunderson Tractor and Implement Co., Ltd.	With	6·5	12·0	950	2,980
	CLASS 2					
1	Agri-tractor Contract Co., Ltd.	With	7·5	12 0	1,000	3,145
2	Agricultural Wholesale Society, Ltd.	With	8·0	14·0	750	2,750
4	Ancona Motor Co., Ltd.	With	6·75	18·0	430	2,025
6	Austin Motor Co., Ltd.	With	5·0	24·0	450	2,830
13	J. I. Case Threshing Machine Co.	With	6·5	16·0	900	3,760
14	Chase Tractors Corporation, Ltd.	With	8·0	10·0	950	2,485
16	Fairbanks, Morse & Co., Ltd.	Across	6 5	16·0	648	2,700
17	Fiat Motors, Ltd.	With	6·5	13·0	510 max.	1,840 max.
29	Martin's Cultivator Co., Ltd.	With	6·0	18·0	418 max.	2,100 max.
32	Melchior, Armstrong & Dessau (Lond.), Ltd.	With	6·38	12·0	900	2,725
34	Noyes, Stockwell & Co , Ltd.	Across	6·0	10·0	1,000 max.	2,620
36	Peter Brotherhood, Ltd.	With	5·5	12·0	900	2,725
37	Pick Motor Co.	With	7·0	14·0	800	2,950
41	Saunderson Tractor and Implement Co., Ltd.	With	7·0	12·0	750	2,450
45	Wallace Farm Implements, Ltd.	Across	5·0	9·0	1,150	2,000
46	W. Weeks & Son.	With	6·0	10·0	900	2,350
	CLASS 3					
7	Fabrique d'Automobiles, Berna, S.A.	With	5·0	10·0	430	1,000
27	John Lauson Manufacturing Co.	With	6·0	18·0	475	2,340
	CLASSES 1 and 2. *Chain-tracks*					
8	Blackstone & Co., Ltd.	With	7·0	18·0	500	2,360
10 & 11	H. G. Burford & Co., Ltd.	With	6·0	8·0	1,000	2,100
	CLASS 4					
28	Mann's Patent Steam Cart and Wagon Co., Ltd.	With	6	30	300	2,400
	CLASS 6					
21	John Fowler & Co. (Leeds), Ltd.	With	9	43	300	3,380
	CLASS 5					
20	John Fowler & Co. (Leeds), Ltd.	With	7	24	400	2,610
31	J. & H. McLaren, Ltd.	Across	6·6	10	1,000	2,620
	CLASS 7					
15	Crawley Agrimotor Co., Ltd.	Across	6	14	500	1,830
22	John Fowler & Co. (Leeds), Ltd.	With	4·75	8	1,100	2,300
30	Martin's Cultivator Co., Ltd.	With	6	18	84	420
33	Motrac Engineering, Ltd.	With	6·5	9	1,100	2,580
38	Ransomes, Sims & Jefferies, Ltd	Across	6	10·5	800	2,200
39	C. Santler & Co., Ltd.	—	—	—		—

Except where otherwise stated the data in this Table are the figures

(continued on next page) TABLE II.

TRACK TRACTORS.

Capacity of Tanks: British Galls.							
Petrol	Paraffin	Lubricating Oil	Water Including Radiator	Water Injection	Carburettor	Radiator	No.
2·0	20·0	3·0	5·0	Yes	Halliday	Honeycomb	3
1·0	10·0	2·0	7·0	None	Zenith	Gilled tube	5
2·0	9·0	4·0	9·0	None	Kingston	Tube and fin	12
0·5	17·5	2·5	9·0	None	Holley	Tube and fin	19
2·0	14·0	2·0	7·0	Yes	Cox atmos	Tubular	23
2·0	18·0	3·5	12·5	Yes	Kingston	Tubular	24
2 0	8·0	2·0	15·0	None	Degory	Film	42
2·0	18·0	1·5	7·0	Yes	Kingston	Honeycomb	1
1·0	23·0	1·0	10·0	Yes, seldom	Schebler	Honeycomb	2
2·0	20·0	3·0	6·0	Yes	Halliday	Honeycomb	4
1·0	10·0	2·0	7 0	None	Zenith	Gilled tube	6
2·5	18 0	5 0	11 0	None	Kingston	Tube and fin	13
2·0	12·0	4 0	6 0	None	Kingston	Prefex	14
1·5	19·2	3·0	8 0	None	Twin-City Holley	Tube and fin	16
2·0	14 0	2·0	7 0	None	Flat twin jet	Gilled tube	17
3·0	15·0	3·0	9 0	None	Holley	Gilled tube	29
3·0	16·0	3·0	7·0	Seldom	Stormberg	Honeycomb	32
0·0	20·0	2·0	5·2	1 to 20	Kingston	Prefex	34
14·0	18·0	—	8·5	None	Zenith modif.	Gilled tube	36
—	8·0	—	5·0	—	—	—	37
2·0	10·0	2·5	17·0	None	Saunderson	Film	41
0·5	14·0	2·0	8·0	None	Zephyr	Gilled tube	45
1·0	5·0	1 0	5·0	None	Zenith	Tubular	46
26·0	—	2·0	10·0	None	Claudel-Berna	Honeycomb	7
5·0	23·0	2·0	5·5	None	Kingston	Honeycomb	27
B —	10·0	2·0	6·0	None	Special	Tubular	8
1·0	11·0	1·5	4·0	None	Kingston	Gilled tube	10& 11

Capacity		Hauling Gear Speeds.								
Bunker	Tank	Drum dia.	Rope dia.	Revs. per min.	Revs. per min.	Revs. per min	Ft. per min.	Ft. per min.	Ft. per min.	
lb.	galls.	in.	in.							
280	200	19·5	0·5	29	46	66	149	235	337	28
						Plough Speeds				
						ft. per min.	ft. per min.	m p hr.	m p.hr.	
500	136	24·3	0·63	51	—	—	330	—	3·75	21

Tank Capacity, British Galls									
Petrol	Paraffin	Lubricating Oil	Water including Radiator	Water Injection					
42	—	7·5	8·75	None	185	290	2·1	3·3	20
3	28	—	10·0	None	265	315	3·0	3·6	31

					Carburettor	Radiator	
0·75	8	—	12	None	Degory No-jet	Gilled tube	15
10·7	—	—	5·7	None	Zenith	Spiral tube	22
3	7·7	3	9	None	Holley	Gilled tube	30
0·5	12	2	4	None	Ensign-Paraffin	Modine-Spire	33
2	10	2	10	None	Zenith	Gilled tube	38
5	5	—	—	—	—	—	39

supplied by the Entrants, checked and corrected where errors have been found.

TABLE II (*continued from previous page*).

WHEELED AND CHAIN-

No	Name of Competitor	Differential Gear	Differential Lock	Axle-height Change
	CLASS 1			
3	Ancona Motor Co., Ltd.	Yes	Yes	No
5	Austin Motor Co., Ltd.	Yes	No	No
12	J. I. Case Threshing Machine Co.	Yes	—	No
19	Henry Ford & Son, Ltd.	Yes	No	No
23	Henry Garner, Ltd.	Yes	No	No
24	General Motors, Ltd.	Yes	No	No
42	Saunderson Tractor and Implement Co., Ltd.	Yes	—	No
	CLASS 2			
1	Agri-tractor Contract Co., Ltd.	Yes	No	No
2	Agricultural Wholesale Society, Ltd.	Yes	—	No
4	Ancona Motor Co., Ltd.	Yes	Yes	No
6	Austin Motor Co., Ltd.	Yes	No	No
13	J. I. Case Threshing Machine Co.	Yes	—	No
14	Chase Tractors Corporation, Ltd.	No	No	No
16	Fairbanks, Morse & Co., Ltd.	Yes	No	No
17	Fiat Motors, Ltd.	Yes	No	No
29	Martin's Cultivator Co., Ltd.	Yes	No	No
32	Melchior, Armstrong & Dessau (Lond.), Ltd.	Yes	No	No
34	Noyes, Stockwell & Co., Ltd.	Yes	—	No
36	Peter Brotherhood, Ltd.	Yes	No	No
37	Pick Motor Co.	—	—	
41	Saunderson Tractor and Implement Co., Ltd.	Yes	—	No
45	Wallace Farm Implements, Ltd.	No	No	Yes
46	W. Weeks & Son.	Yes	Yes	No
	CLASS 3			
7	Fabrique d'Automobiles, Berna, S.A.	Yes	No	No
27	John Lauson Manufacturing Co.	Yes	Yes	No
	CLASSES 1 and 2. *Chain-trucks*			
8	Blackstone & Co., Ltd.	Yes	—	—
10 & 11	H. G. Burford & Co., Ltd.	Yes	—	—
	CLASS 4			
28	Mann's Patent Steam Cart and Wagon Co., Ltd.	Yes	Yes	None
	CLASS 6			
21	John Fowler & Co. (Leeds), Ltd.	Driving pins		None
	CLASS 5			
20	John Fowler & Co. (Leeds), Ltd.	Yes	Yes	None
31	J. & H. McLaren, Ltd.	Yes	None	None
	CLASS 7			
15	Crawley Agrimotor Co., Ltd.	Clutch to each wheel		None
22	John Fowler & Co. (Leeds), Ltd.	Yes	Yes	Yes
30	Martin's Cultivator Co., Ltd.	No	No	Yes
33	Motrac Engineering, Ltd.	Yes	Yes	Yes
38	Ransomes, Sims & Jefferies, Ltd.	Yes	No	No
39	C. Santler & Co., Ltd.			

Except where otherwise stated the data in this Table are the figures

(continued on next page) TABLE II.

TRACK TRACTORS.

Drawgear Details					Overall			Front Wheels			
Height Max.	Height Min.	Lateral Adjustment	Distance behind Back Axle	Ground Clearance	Length	Width	Minimum Turning Circle Dia.	No.	Dia.	Width	No.
in.	in.	in.	in.	in.	ft. in.	ft. in.	ft. in.		in.	in.	
17	13½	10½	22	13	11 0	5 1	26 0	2	30	8	3
18	9	30	34	12	9 2	5 1	25 4	2	30	6	5
13	13	—	—	13	8 6	4 8	24 10	2	30	6	12
12	12	9½	13·5	11	8 6	5 2	22 6	2	28	5·3	10
12½	8	15	26	9½	10 6	5 6	24 8	2	30	4	23
11	11	3½	15	10	9 6	4 10	27 2	2	27	4·3	24
23½	16¾	15	30	16	10 1	4 2½	26 7	2	27	5	42
18	18	42	42	18	12 2	6 1	24 4	2	46	4	1
16½	0	48	—	16½	11 9	6 4	23 4	2	28	4·3	2
17	13½	10½	22	13	11 0	5 1	25 6	2	30	8	4
18	9	30	34	12	9 2	5 1	22 9	2	30	6	6
14	14	42	—	14	10 7	6 0	31 8	2	32	6	13
21	15	30	30	15	11 8	6 0	16 6	1	36	8	14
16	16	12	16	11	11 2	5 3	25 6	2	34	6	16
27½	15½	34	26	15	10 0	5 5	26 8	2	32	5	17
27	18	13	14	12½	11 9	5 11	30 6	2	33	6	20
16	12	15	—	12	11 1	4 7	28 0	2	36	6	32
18	18	30	24	18	10 0	5 1	22 7	2	31	5	34
18	10	12	24	12	11 0	5 0	37 0	2	36	6	36
21	10	—	—	—	—	—	—	2	36	5	37
20½	16½	21	36	18	12 0	5 6	36 0	2	30	6	41
12	9	10	27	14	11 4	5 0	36 0	2	39	8	45
20	12	20	27	12	8 6	4 0	25 9	2	30	5	46
12	9	·5	32	10	14 5	5 4	32 0	2	33	6	7
12	12	27	32	11½	11 4	6 2	—	2	36	6	27
18½	18½	10	9½	7½	8 1	4 6	22 8	Chain-track			8
15	15	15	10	12	8 6	4 2	13 0	Chain-track			10& 11
10	19	30	30	9	13 5	5 10	21 0	2	35	8	28
33	33			13	20 2	6 8	39 0	2	48	9	21
35	35	—	—	15	19 4	7 2	—	2	42	9	20
—	—	—	—	9·5	16 4	6 6	42 0	2	38	9	31
Type of Plough											
Martin or Ransomes				10·5	17 6	5 2	24 0	2	48	8	15
Fowler 2-furrow				8	17 2	4 4	—	2	54	8	22
Martin 3-furrow (chain tracks)				13	18 0	4 8	20 0	2	Track	8	30
Moline 3-furrow				29	5 6*	4 6	16* 0	2	52	8	33
Ransomes 3-furrow				13	16 0	5 6	24 0	2	52	9	38
2-furrow each way				—	—	—	—	1	24	6	39

* Without plough.

supplied by the Entrants, checked and corrected where errors have been found.

TABLE II (*continued from previous page*).

WHEELED AND CHAIN-

No.	Name of Competitor	Rear Wheels			Wheel Base	Load on Wheels		
		No.	Dia.	Width		Front	Rear	Total
	CLASS 1		in.	in.	in.	lb.	lb.	lb.
3	Ancona Motor Co., Ltd.	2	48	12	84	1,288	2,024	4,212
5	Austin Motor Co., Ltd.	2	42	10	68	1,344	2,076	3,420
12	J. I. Case Threshing Machine Co.	2	42	9	65	1,468	2,336	3,804
19	Henry Ford & Son, Ltd.	2	42	12	63	1,072	1,588	2,660
23	Henry Garner, Ltd.	2	40	10	76	1,344	2,688	4,032
24	General Motors, Ltd.	2	45	12	66	1,340	2,060	3,400
42	Saunderson Tractor and Implement Co., Ltd.	2	42	10	78	—	—	3,024
	CLASS 2							
1	Agri-tractor Contract Co., Ltd.	2	60	10	94	1,378	4,137	5,515
2	Agricultural Wholesale Society, Ltd.	2	52	10	89	1,404	4,076	5,480
4	Ancona Motor Co., Ltd.	2	48	12	84	1,248	2,960	4,208
6	Austin Motor Co., Ltd.	2	42	10	68	1,344	2,076	3,420
13	J. I. Case Threshing Machine Co.	2	52	12	76·5	1,992	3,936	5,928
14	Chase Tractors Corporation, Ltd.	2	48	12	102	2,050	3,550	5,600
16	Fairbanks, Morse & Co , Ltd.	2	50	12	84	1,704	3,146	4,850
17	Fiat Motors, Ltd.	2	52	12	69	2,324	4,068	6,384
29	Martin's Cultivator Co., Ltd.	2	51	10	83	2,240	3,581	5,821
32	Melchior, Armstrong & Dessau (Lond.), Ltd.	2	54	12	87	1,406	3,128	4,921
34	Noyes, Stockwell & Co., Ltd.	2	46	10	86	1,500	2,956	4,456
36	Peter Brotherhood, Ltd.	2	54	10	87	1,920	3,736	5,656
37	Pick Motor Co.	2	48	12	–	1,904	2,576	4,480
41	Saunderson Tractor and Implement Co. Ltd.	2	48	10	90	1,818	4,312	6,130
45	Wallace Farm Implements, Ltd.	1	30	12	75	1,680	2,720	4,410
46	W. Weeks & Son	2	40	10	72	1,400	2,520	3,920
	CLASS 3							
7	Fabrique d'Automobiles, Berna, S.A.	2	65	12	120	2,240	5,150	7,390
27	John Lauson Manufacturing Co.	2	54	12	86	2,230	4,695	6,925
	CLASSES 1 and 2. *Chain-tracks*		Bearing		Centres			
8	Blackstone & Co., Ltd.	2	52	7	59	—	5,040	5,040
10 & 11	H. G. Burford & Co., Ltd.	2	48	8	50	—	3,068	3,068
	CLASS 4							
28	Mann's Patent Steam Cart and Wagon Co., Ltd	2	51	20	97	3,581	8,738	12,320
	CLASS 6							
21	John Fowler & Co. (Leeds), Ltd.	2	72	16	147	7,700	19,150	26,850
	CLASS 5							
20	John Fowler & Co. (Leeds), Ltd.	2	66	16	147	6,500	11,870	18,370
31	J. & H. McLaren, Ltd.	2	42	9	120	2,300	5,900	8,200
	CLASS 7					About		
15	Crawley Agrimotor Co., Ltd.	—	—	—	—	4,900	—	5,200
22	John Fowler & Co. (Leeds), Ltd.	—	—	—	—	4,400	—	4,600
30	Martin's Cultivator Co., Ltd.	—	—	—	—	4,300	—	4,480
33	Motrac Engineering, Ltd.	2	26	5	—	3,200	1,200	4,400
38	Ransomes, Sims & Jefferies, Ltd.	—	—	—	—	4,600	—	5,820
39	C. Santler & Co., Ltd.	2	51 50	9 12	—	900	4,480	5,380

Except where otherwise stated the data in this Table are the figures

TABLE II (*concluded from previous page*).

TRACK TRACTORS.

For 1 in. Sinkage		Brakes			Rated h.p.		Cost of Tractor			
Area of Back Wheel Bearing†	Insistent Load: lb. per sq. in.†	No.	Acting on	Springing	Per Furrow†	Per Ton†	Total Sept. 27, 1920	Per Furrow†	Per h.p.†	No.
sq. in.							£	£ s.	£ s.	
165	17·8	2	2 rear wheels & pulley	Sprung	11·8	12·6	525	262 10	22 5	3
128	16·2	2	Each rear wheel	Front axle	11·0	14·3	360	180 0	16 9	5
115	20·3	1	Pulley	None	10·3	12·1	425	212 10	20 15	12
154	10·8	None		None	10·4	17·5	260	130 0	12 10	19
125	21·5	1	Two rear wheels	Front axle	11·6	12·9	465	232 10	20 1	23
159	12·9	1	Belt pulley	None	11·5	15·1	330	165 0	14 8	24
128	—	2	Both rear wheels	Front wheels	10·0	14·8	350	175 0	17 10	42
154	26·9	1	Spur gear	None	8·6	10·5	575	191 13	22 6	1
143	28·5	2	Differential and pulley	None	9·6	11·8	530	176 13	18 8	2
165	18·0	2	Rear wheels and pulley	Sprung	7·9	12·6	525	175 0	22 5	4
128	16·2	2	Each rear wheel	Front axle	9·1	17·9	360	120 0	13 3	6
171	23·0	1	Pulley	None	9·5	10·7	600	200 0	21 3	13
165	21·6	1	Pinion shaft	Front wheel	8·2	9·8	500	166 13	20 8	14
168	18·7	1	Intermediate gear	Front wheels	9·4	13·0	525	175 0	18 14	16
171	23·9	1	Pulley	Front axle	9·4	9·9	595	198 7	21 0	17
141	25·3	2	Pulley and gear ring	Both axles	7·7	8·9	510	170 0	22 0	29
175	19·6	1	Final drive	None	8·8	12·0	495	165 0	18 15	32
134	22·0	2	Each rear wheel	Sprung	9·8	14·5	450	150 0	15 11	34
175	21·4	1	2nd motion shaft	None	9·7	11·5	575	191 13	19 17	36
165	15·7	2	—	None	7·0	10·5	—	—	—	37
137	31·4	2	Gear shaft and diff.	Front wheels	7·9	8·6	510	170 0	21 12	41
74	36·8	1	Side shaft	None	8·9	13·6	550	183 7	20 12	45
126	19·9	1	Cardan shaft	Front axle	8·1	13·9	485	161 13	19 19	46
192	26·8	2	Both countershafts	Front axle	8·4	10·2	1,100	275 0	32 17	7
175	26·7	2	Shaft and pulley	None	8·4	10·8	700	175 0	20 19	27
936	5·4	1	2nd motion shaft	None	7·9	10·6	575	191 13	24 3	8
800	4·6	1	Differential	Sprung	8·0	14·7	475	158 7	19 16	10& 11
283	30·9	1 1	Back axle Steam and reverse	Sprung	6·25	4·6	1,000	250 0	40 0	28
							Total per pair	Per furrow per pair		
270	70·9	1	Steam reverse	—	—	—	4,330	866 0	—	21
									Per h.p. per pair	
258	46·0	1 1	Cardan shaft Epicyclic gear	—	9·2	5·6	4,000	800 0	87 0	20
115	52·1	1 1	Worm spindle Winding drum	—	8·0	8·6	2,250	562 10	70 6	31
							Total	Per furrow	Per h.p.	
110‡	45·0‡	1	Propeller shaft	None	8·1	10·5	545	181 13	22 8	15
117‡	37·6‡	1	Each wheel	None	10·55	10·3	400	200 0	19 10	22
640‡	6·7‡	1	Each track	None	7·7	11·6	400	133 7	17 5	30
114‡	28·1‡	2	Diff. shaft (hand)	None	6·9	10·5	565	188 7	27 6	33
129‡	35·7‡	1	Each wheel	None	6·7	7·7	500	166 13	25 0	38
148*	30·3*	1	—	Front	7·8	6·5	—	—	—	39

* On back wheels. † Calculated from the data in the table. ‡ On front wheels.

supplied by the Entrants, checked and corrected where errors have been found.

TABLE III : Speed of ploughing, fuel consumption and costs per acre.

Class	Land	No of furrows	No. of Attendants	Time in hours per acre			Fuel in gallons per acre			Wages in pence per acre			Fuel cost in pence per acre			Total cost labour and fuel per acre	
				Minimum	Average of 5 lowest	Maximum	Minimum	Average of 5 lowest	Maximum	Minimum	Average of 5 lowest	Maximum	Minimum	Average of 5 lowest	Maximum	Minimum*	Average of whole class
																s. d.	s. d.
1	Light	2	1	1·58	1·92	2·33	2·63 *2·82*†‡	2·90 *3·34*	5·41 *7·21*	28 5	34·5	44·0	60·5 *64·9*	66·7 *76·9*	124·4 *165·8*	7 5	9 5
1	Heavy	2	1	1·75	1·96	2·61	3·42 *2·31*	3·84 *2·95*	5·51 *3·83*	31·5	35·3	47·0	78·6 *53·1*§	88·4 *68·0*	126·7 *88·1*	9 2	10 11
2	Light	3	1	1·09	1·21	1·99	2·06	2·96	4·12	19 6	21·8	35·8	47·4	68 0	94·8	5 7	8 4
2	Heavy	3	1	1·30	1·52	4·00	2·96 *1·78*	3·63 *2·05*	6 51 *5·34*	23·4	27·4	72·0	68·1 *40·9*§	83·5 *47·0*	149·7 *122·8*	7 7½	11 8
3	Light	4	1	1·21	—	1·60	2·62	—	3·06	21·8	—	28·8	60 2	—	125·4	6 10	9 0
3	Heavy	4	1	2·01	—	—	7·12	—	—	36 2	—	—	163·8	—	—	16 8	16 8
4	Light	4††	2	1·02	—	—	147 lb.	—	—	36 9	—	—	35·0	—	—	6 0	6 0
4	Heavy	4††	2	1·83	—	—	330 lb.	—	—	66·0	—	—	78·7	—	—	12 1	12 1
5	Light	4 or 5‖	3	0·55	—	0·70	1·92	—	2·63‡‡	29 7	—	37·8	44·2	—	107·8‡‡	6 2	9 3
5	Heavy	4 or 5‖	3	1·03	—	1·49	4·03‡‡	—	4·34	55·4	—	80·3	100 0	—	165·3‡‡	13 0	16 10
6	Light	5††	4	0 62	—	—	97 lb.	—	—	44·5	—	—	23·1	—	—	5 7½	5 7½
6	Heavy	5††	4	0 77	—	—	177 lb.	—	—	55 4	—	—	42·2	—	—	8 1½	8 1½
7	Light	3**	1	1·46	1·59	2·42	2·21	2 84	4·48	26·3§§	33·9	43·5	50·8	65·3	103·0	6 5	9 3½
7	Heavy	3**	1	1·30	2·08	3·22	2·27	3·78	6·21	23·4‡‡	37·4	58·0	52·2	86·9	142·8	6 3½	13 2

NOTE.—The figures for minimum time and minimum fuel consumption per acre do not necessarily apply to the same tractor. The same is the case for the maxima.

* These figures are the total of minimum wages per acre and minimum cost of fuel per acre, though not necessarily actually obtained by the same tractor.

† The figures in italics are per equivalent acre: the figures above in roman type are per actual acre.

‡ This entrant was working with a draw-bar pull 20 per cent greater than any other in the class.

§ These figures for cost per equivalent acre represent the cost of fuel that would have been obtained on light land of standard resistance to the plough.

‖ One competitor worked with a furrow less than the maximum.

** Two competing machines ploughed two furrows only.

†† Coal only used as fuel.

‡‡ Petrol only used as fuel.

§§ One Competitor was frequently slowed down by water in the paraffin.

APPENDIX I.

DESCRIPTIONS OF THE PLOUGHS USED IN THE TRIALS.

1. The Ruston and Hornsby Double-Furrow Plough.

The double-furrow Ruston and Hornsby plough is a one-man outfit, operated from the tractor driver's seat by means of a cord. It can easily be converted into a three-furrow plough, and by a change of bodies and breasts can be made to do either ordinary or digging work.

The malleable bodies are adjustable as to width, and the depth can also be regulated. Ample clearance has been allowed for rough and weedy land.

The plough is exceptionally strong—the steel beams being designed for the heaviest work ; the brackets are malleable, and give perfect rigidity. Dustproof caps are fitted to the land and furrow wheels. A carrying swivel wheel is fitted, and works in conjunction with the lifting arrangement.

Swivel disc coulters are supplied for general purpose work ; skims for digging.

2. The Ransomes RSLM-YL Three-Furrow Plough.

This is a one-man self-lift cord-operated plough.

The frames are constructed of plain steel beams of adequate strength, connected together by strong screwed stays.

Forged steel heads of ample dimensions are bolted to the beams to which the hake is attached, and sufficient range is provided to cover the correct positions of draught for practically all types of tractors.

The skifes are malleable, of ample proportions, and fitted with adjustments for "pitch."

The breasts and shares for general purpose or lea work are of the well-known "YL" pattern.

The wheels are of wrought steel, having rounding tyres, and are fitted with renewable dustproof and oil retaining bushes, which ensure perfect lubrication.

The depth regulating lever is arranged so that it can be conveniently used as a hand-power lever for raising the plough out of work.

An efficient screw adjustment is provided for the depth regulation of the furrow wheel.

The furrow wheel can be set to "bed" close up to the land side.

Adjustments are provided for varying widths as well as depths. A maximum depth of 8 in. to 9 in. can be obtained, while the range of adjustment for the width of furrow is from 8 in. to 10 in. for general purpose work.

The self-lift arrangement is operated from the land wheel and is positive in action, simple and effective. It consists of a toothed rack, which engages with a pinion fixed to the nave of the land wheel. When operated (by means of the cord release provided, which is controlled by the driver of the tractor), the forward motion causes the plough to climb gradually out of work, and it is securely held in its raised position until released.

A lifting arrangement is fitted to the trailing wheel to facilitate the turning of the plough at the headlands.

Swivel disc coulters are the standard fitting for general purpose work, but skim coulters can be fitted to the discs if required at an extra charge.

APPENDIX II.

NATIONAL PHYSICAL LABORATORY TRACTION DYNAMOMETER FOR AGRICULTURAL TRACTORS.

By J. H. Hyde, A.M.Inst.C.E., M.I.A.E., A.M.I.M.E.

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In the summer of 1919 the Laboratory was approached by the Society of Motor Manufacturers and Traders with a request for assistance in the recording of draw-bar pulls of agricultural tractors at Lincoln in September of that year, on the grounds that no suitable British-made draw-bar provided with recording apparatus was available for the purpose. It was required that the draw-bar in these trials should be attached to the forward turntable of an ordinary road trailer which would be loaded and braked on the rear wheels in order to provide sufficient road resistance to enable the maximum draw-bar effect of the tractors to be determined. In the arrangement adopted the pull of the tractor was transmitted through a bell-crank lever to a leather diaphragm fitted to a box containing water. The diaphragm box was connected by a flexible pipe to a recording pressure gauge actuating a pen. The motion of the recorder paper was produced by means of gearing from the front wheels of the tractor.

In the present year the Laboratory received a similar request from the Royal Agricultural Society of England in conjunction with the Society of Motor Manufacturers and Traders in connection with the measurement of draw-bar pulls and speeds of tractors under ploughing conditions at the trials to be held at Lincoln in September-October, 1920. The Executive Committee of the Laboratory agreed that all possible help for the successful carrying out of the trials should be given by the engineering department, and a special dynamometer was designed and made at the Laboratory for the purpose.

The design of the instrument was influenced by the necessity of producing a dynamometer which would be capable of measuring and recording the draw-bar pull and speed of a tractor engaged in ploughing, special consideration being at the same time given to the fact that it was undesirable to separate the tractor and plough by apparatus which would in any way interfere with the proper working of the plough or with its control by the tractor driver.

For the purpose of competitive tractor trials, the dynamometer would be required for use with many different makes of tractors and ploughs, and it could not be guaranteed that a suitable position for apparatus could be provided on either; further, it was desirable that the dynamometer should be capable of being quickly attached to or detached from one tractor and transferred to another. In consideration of these requirements it was decided to separate the dynamometer proper from the recording instrument and to place the latter on a light-wheeled carriage which could be either wheeled or towed alongside the tractor under test.

The Dynamometer.—The coupling between the tractor and plough consists of a cylinder and plunger, the former being attached to the draw-bar of the tractor and the latter, through links, to the plough. The pull on the coupling sets up a pressure in the oil confined in the cylinder, and this pressure is transmitted to a recording pressure gauge by a flexible hydraulic tube. The best flexible tube which could be obtained would safely withstand an internal pressure of 1 ton per square inch without reduction of flexibility, and as the dynamometer was required for pulls up to 3 tons, a diameter of plunger of approximately 2 in. was therefore necessary.

The cylinder was made of steel and the plunger of bronze, the clearance between the two was made 0·001 in., and the plunger was provided with a very thin packing ring of oiled leather. In order to avoid a gland the draw-bar pull was converted to a thrust on the plunger by means of the links L, L, and the pins P_1, P_2. The thrust on the plunger is transmitted through the second plunger E, which is suitably guided in a continuation of the cylinder, and the connection between the two plungers is a loose one in order to allow the larger plunger to float freely in its cylinder. The pin P_1 passes through the slots in the guide-piece.

The connection to the tractor draw-bar was made in such a manner that the cylinder could not rotate, but the opposite end of the dynamometer was provided with a swivel attachment for the plough. A rubber cover over the front portion served to exclude dust and grit from the interior of the cylinder.

The Recording Instrument.—The recording instrument was mounted on a two-wheeled carriage which was towed by the tractor, a suitable hitch being made to prevent damage to the connecting hydraulic tube. The recorder consists of a standard Schaffer and Budenberg pressure recorder considerably modified for the present purpose by the addition of a second Bourdon tube, a clock, and paper-driving device. The recording paper is driven through gearing and a chain drive from one of the carriage wheels, and three speeds of the paper are provided for, namely, 1 in. of travel to 100 ft., 50 ft., or 10 ft. motion of the carriage over the ground. The speed-change can be made while running if desired. As the recorder proper rests on thick felt pads, the final drive is made by means of a leather vee belt adjustment of the tension of which is provided for. The hydraulic tube from the dynamometer is connected to a small valve-box by which the pressure can be diverted to either of two Bourdon tubes.

The motion of the end of each Bourdon tube is magnified by a pen mechanism which is such that the travel of the pen is

4 in. for a maximum draw-bar pull of 4,000 lb. using tube No. 1, and 3¼ in. for a maximum pull of 7,000 lb., using tube No. 2. The pen mechanism can be transferred to either tube by transferring a screw which forms the link pivot; the change can be effected during a test if required.

A clock is provided inside the recorder for indicating time on the record paper. An electrical contact is made at equal pre-determined intervals of time which can be varied from 2 seconds to 6 seconds, and the pen, which normally draws a straight line, is momentarily moved to one side when the contact takes place. A robust escapement for the clock is provided, and was found in practice to work extremely well, there being no apparent variation in the time intervals recorded, or in the total time even when the carriage was travelling over very rough ground and subject to much shock. In order that the number of time intervals indicated may be readily counted, every fourth contact is missed. A second pen is provided for recording revolutions of the tractor engine, or of the tractor driving wheels, and is identical with the time-recording pen.

An oil pump, taking oil from a small reservoir placed under the carriage, serves to prime the dynamometer and recorder. This pump is shut off when the apparatus is working. It will be observed that the measured distances on the chart between indications of equal time intervals are directly proportional to the speed because the travel of the paper is proportional to the distance travelled. The average speed for any interval of 5 seconds can, therefore, be readily obtained, and the curve of speed plotted on the chart. When the speed is low, and variable, this method for recording is preferable to using a centrifugal instrument.

Calibration.—The apparatus was calibrated by direct loading. The dynamometer coupling was hung from a crane hook and supported a cradle carrying a dead load which was increased by 500 lb. at a time. The indications of both pens were taken in turn and were found to agree precisely with those obtained by calculation from the oil pressure and the sectional area of the cylinder. When the load was 2,000 lb. a shift of the pen point of 0·01 in. could be clearly seen due to a gently added load of 10 lb. It was necessary to provide a small tapping device, consisting of the essential parts of an ordinary electric bell, to free the pen mechanism in order to enable it to record so small a load, but it was not necessary to use this during a test because the motion of the recorder carriage itself provided sufficient vibration for the purpose. The calibration left no room for doubt that the friction of the packing leather of the plunger in the dynamometer cylinder was small enough to be neglected. The sensitivity did not appear to be materially affected by the use of thick oil in the cylinder, and consequently for ploughing tests on stony ground or stiff land where the pull is very variable, it is advisable to use thick oil in order to damp the vibrations of the recording pen.

APPENDIX III.

The Judges have obtained two estimates of the cost of ploughing. The one from Mr. John Evens, who farms in the district of the trials, is as follows:—

"At the Lincoln trials there were, broadly speaking, three classes of land:—

"1. Light land on the cliff.
"2. The lighter portion of the low land, field 'F.'
"3. The heaviest low land fields 'G' and 'I.'

"The average cost of ploughing this land 6 in. deep with horses in 1920 was estimated at:—

"1. Cliff land, 22*s* 6*d*. per acre.
"2. Medium heavy land, 30*s*. to 35*s*. per acre.
"3. Very strong, 40*s*. to 45*s*. per acre.

"The prices being based on the 1920 season's costs of labour and horse-keep.

"The relative value of tractors and horses may be expressed thus:—

"In the English climate, and for English conditions of soil, it must not be expected that the tractor will *displace* horses. Tractors are becoming increasingly useful to help out the horse work, because under the present conditions and hours of work the horses do not, and cannot, get the work done.

"The chief advantage of the tractor is its ability to work for long hours and make a push when the land is dry and when cultivation does most good.

"The most desirable features in a tractor are that it shall be as simple, as strong, and as reliable as possible, and these qualities are of more importance than the mere question of price."

The other estimate, from Mr. B. Howkins, of Bedford, gives comparative figures based on his own practical experience, and is as follows:—

Tractor Ploughing per Acre.	£	*s.*	*d.*
Wear and tear of tractor	0	10	0
Paraffin oil, 4 gal. at 1*s*. 11*d*.	0	7	8
Lubricating oil	0	1	6
Labour.—One man at £3 10*s*. per week. Weekly average, 15 acres. Cost per acre.	0	4	8
Plough, shares, etc. . .	0	2	6
Cost per acre	£1	6	4

Horse Ploughing per Day.	£	*s.*	*d.*
Three horses at 8*s*. per day	1	4	0
One man and one boy, per day	0	15	0
Plough, shares, etc., per day	0	2	0
Estimated daily work, $\frac{5}{6}$th of an acre.			
	2	1	0
Cost per acre. . . .	£2	9	4

This is the estimated cost of ploughing medium strong land.

(The prices quoted in this comparison refer to Michaelmas, 1920. and to the usual working hours.)

Both costs would vary according to the class of land ploughed. The tractor can be of very great assistance to the farmer, especially in the early autumn; it can enable him to get his land up early, which is nearly as good as a dressing of manure; but the farmer must not rely upon tractors entirely.

The officials cannot speak too highly of the way in which the promoters of the trials were met by all concerned. Every facility was given, not only by the farmers on whose land the trials were held, but by everybody in the locality, and by engineering works and tradesmen in Lincoln.

Most cordial thanks should be given to the farmers who lent their land, *viz.*:—Messrs. Ward, Sargeant, Parkin, Sutton, Shelton and Brown.

The Society is greatly indebted to:—

The Chief Constable for the efficiency of the police.

Messrs. Letheby and Christopher, Ltd., for their catering.

Messrs. John Gilbert & Sons, Ltd., for garage arrangements, and for their readiness to assist in all matters.

The Anglo-American Oil Co., Ltd., for so satisfactorily carrying out arrangements for the supply of fuel oil.

Messrs. Ruston & Hornsby, Ltd., Messrs. Ransomes, Sims & Jefferies, Ltd., and Messrs. Martin's Cultivator Co., Ltd., for the use of their ploughs and implements, and for providing expert ploughmen. The above firms were successful in the ballot for supplying the ploughs, but the thanks of the Society are also due for the generosity of the several other firms who offered to place their ploughs and implements at the service of the Society.

To Mr. J. R. Jackson, the Trial Superintendent, we are deeply indebted for the setting out of the ground and for providing everything required. He was quite indefatigable, and we were much impressed with his ability and courtesy throughout.

Mr. John Evens, a member of the Trials Sub-Committee, needs a special word of thanks for the very great assistance he has given throughout. We regret that owing to illness Mr. C. W. Tindall was unable to take any active part. Mr. Deck, of Messrs. Ransomes, Sims & Jefferies, was also most energetic and helpful.

JOHN E. CROSS,
U. ROLAND BURKE.
Stewards, R.A.S.E.

THOS. MCROW,
Secretary.

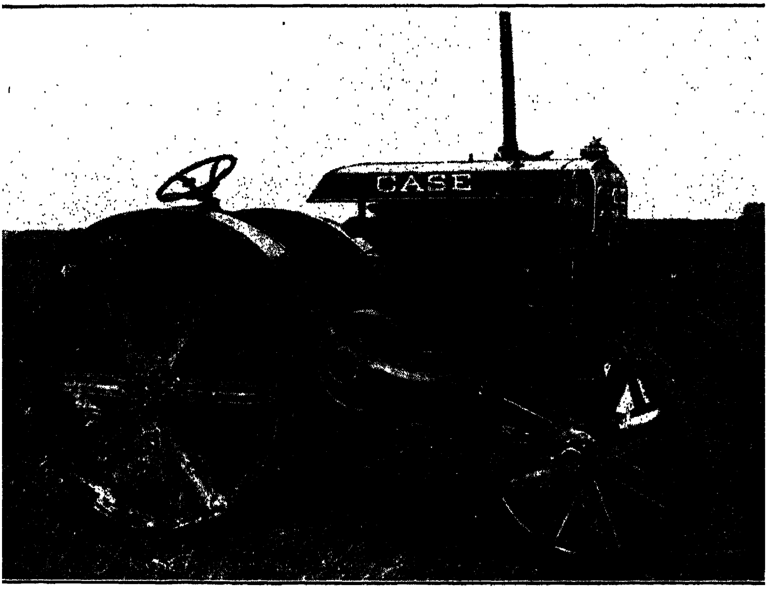

FIG. 1.—CLASS I., 1ST PRIZE: CASE 10–18 TRACTOR (*p.* 9).

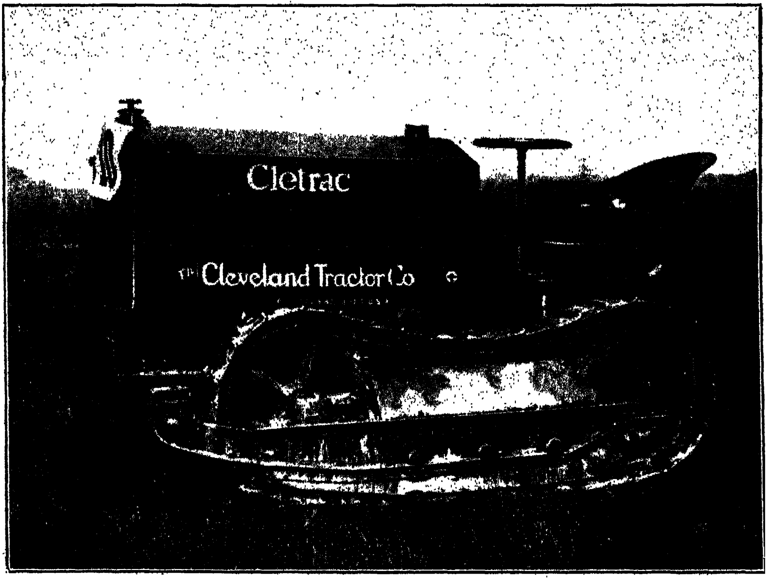

FIG. 2.—CLASS I., 2ND PRIZE: CLETRAC TRACTOR (*pp.* 9 *and* 17).

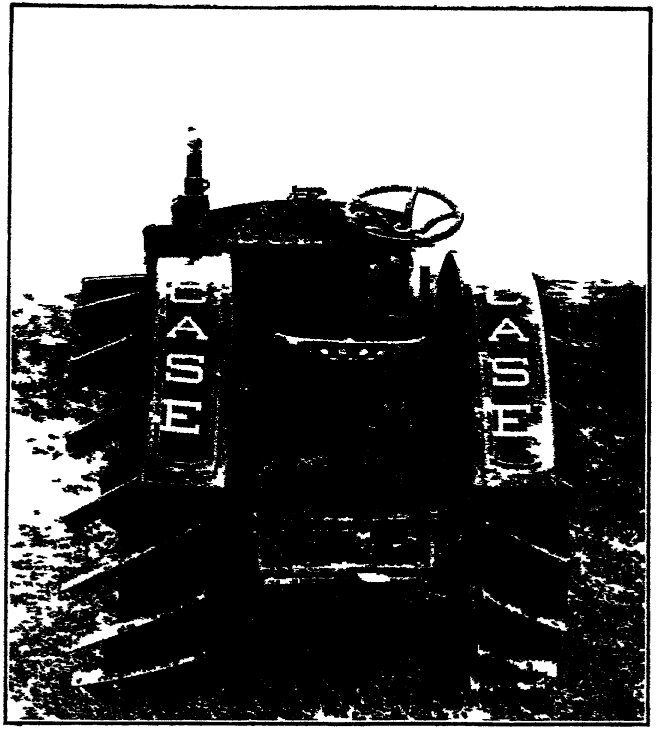

Fig 3 —Class I 1st Prize Case 10-18 Tractor (*p* 9)

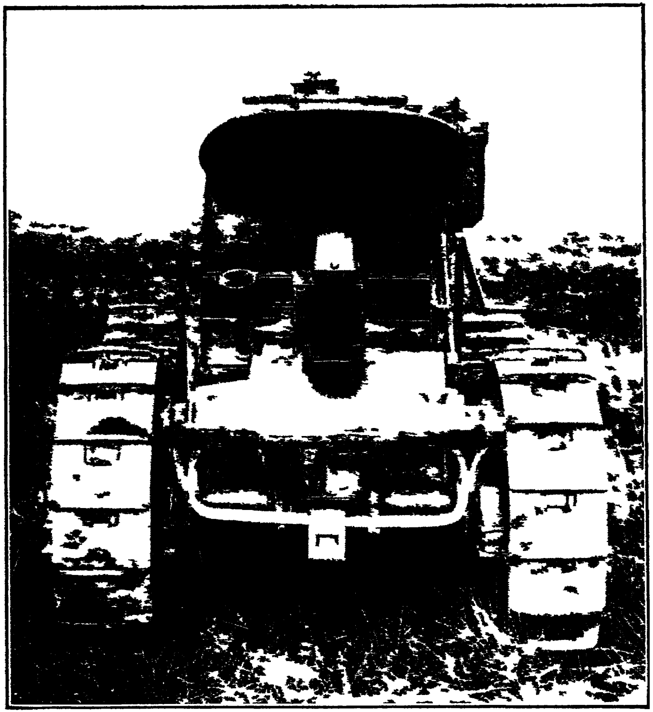

Fig 4 —Class I, 2nd Prize Cletrac Tractor (*pp* 9 *and* 17)

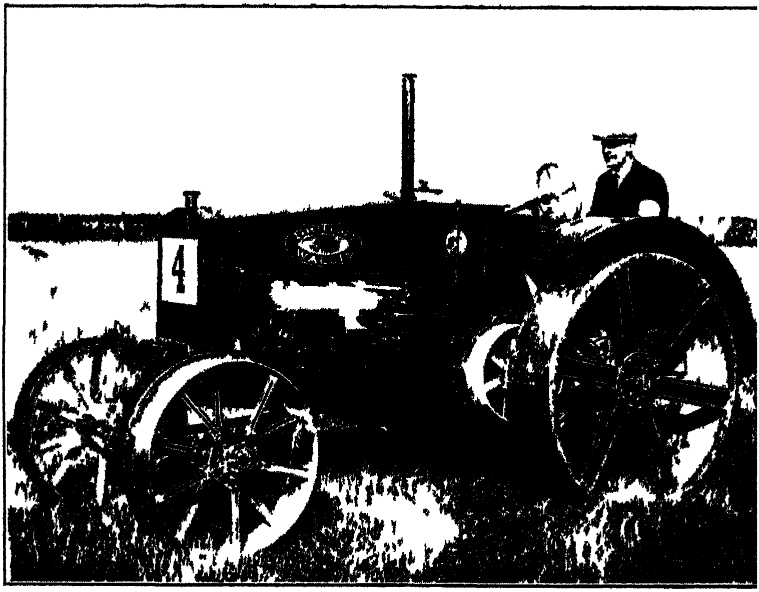

Fig 5—Class II, 1st Prize British Wallis Tractor (*pp* 7 *and* 16)

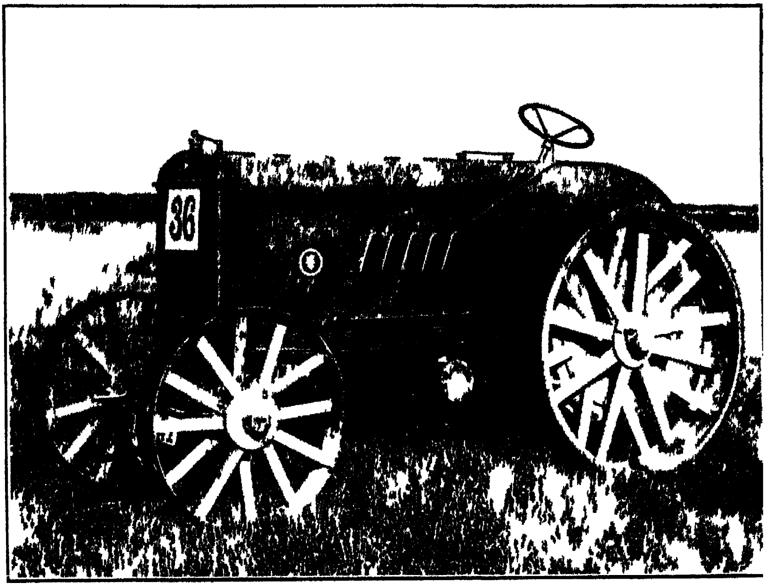

Fig 6—Class II, 2nd Prize Peterbro Tractor (*p* 23).

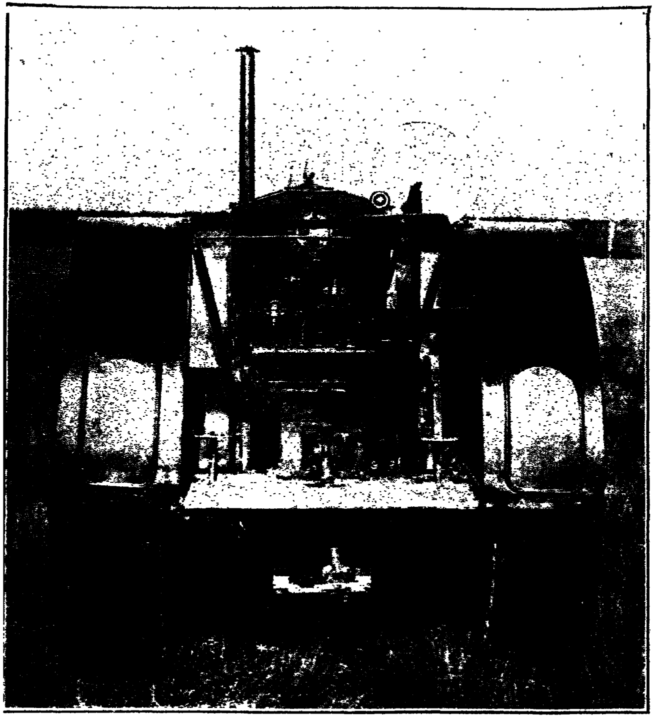

Fig. 7.—Class II., 1st Prize: British Wallis Tractor (*pp.* 7 *and* 16).

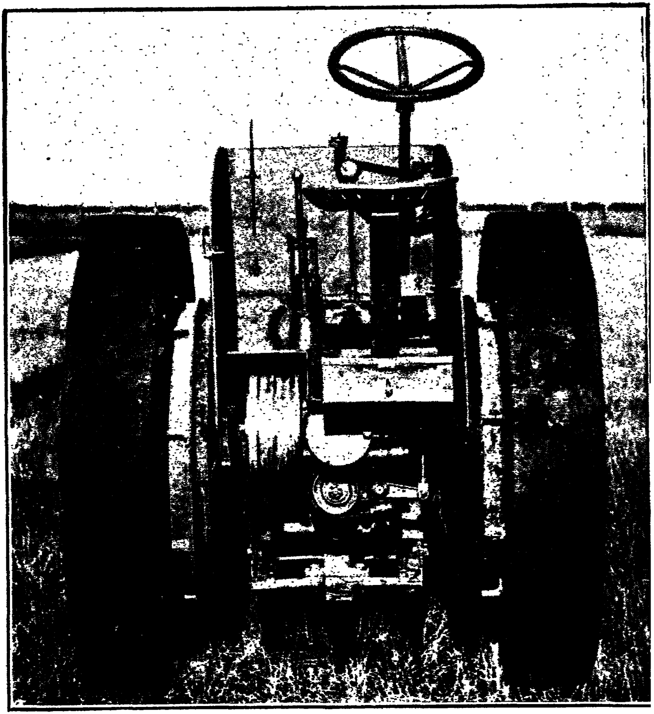

Fig. 8.—Class II., 2nd Prize: Peterbro' Tractor (*p.* 23).

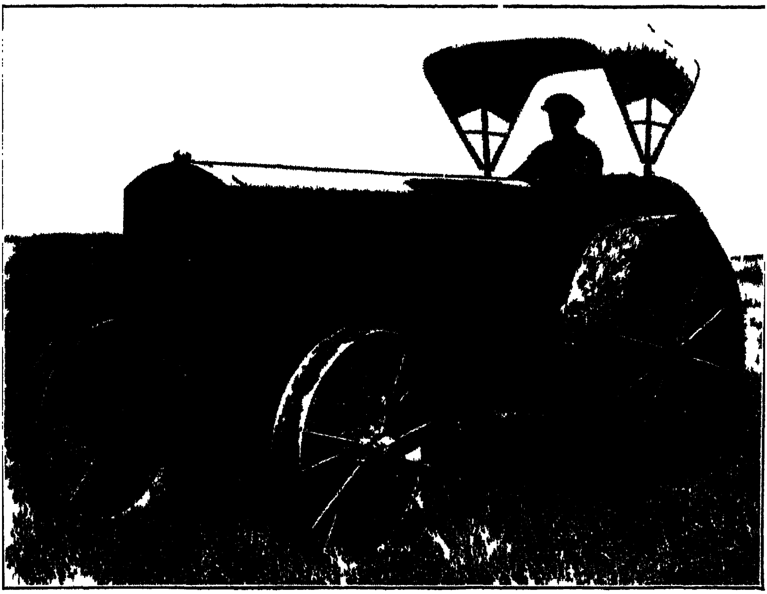

FIG 9—CLASS III, 1ST PRIZE LAUSON 15-30 TRACTOR (*p* 28)

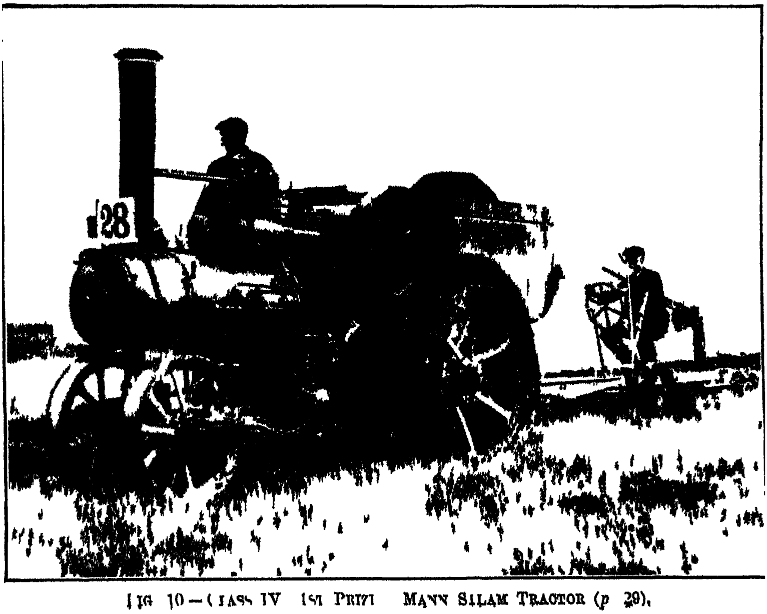

FIG 10—CLASS IV 1ST PRIZE MANN STEAM TRACTOR (*p* 29).

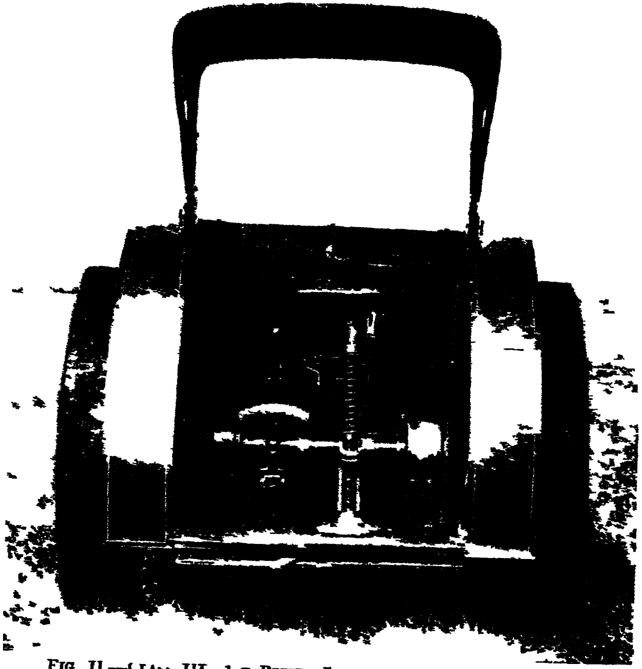

FIG 11—CLASS III 1ST PRIZE LARSON 15-30 TRACTOR (p 28)

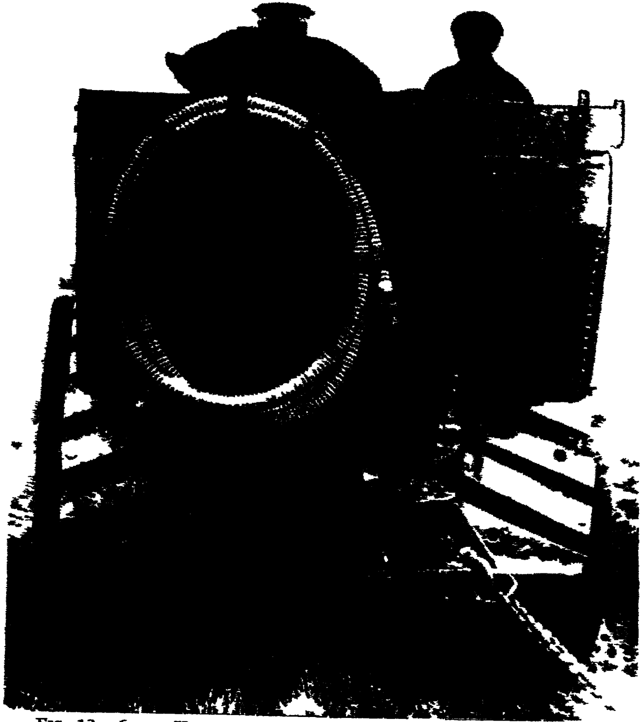

FIG 12—CLASS IV 1ST PRIZE MANN STEAM TRACTOR (p 24)

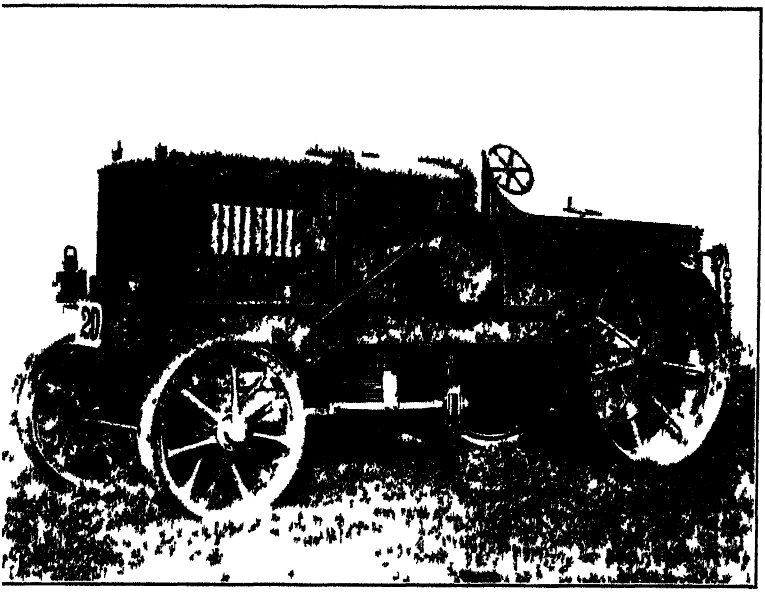

Fig 13.—Class V, 1st Prize Fowler Motor Cable Plough (p 30)

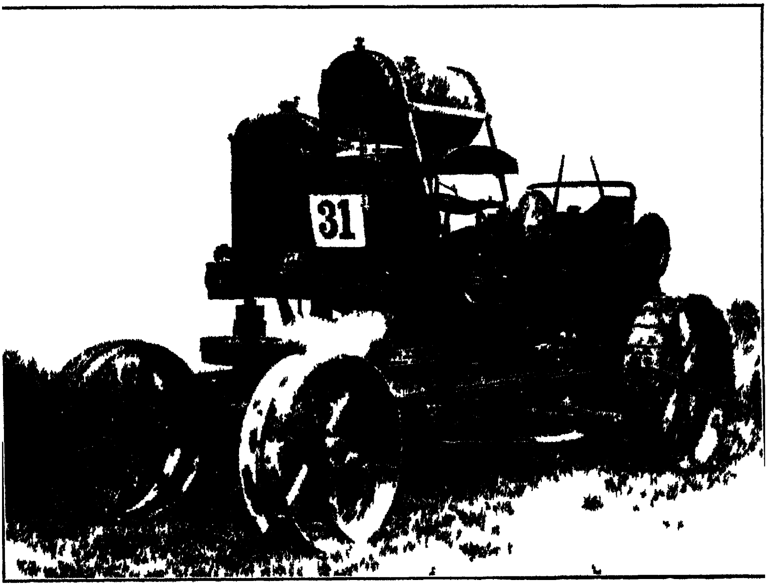

Fig 14.—Class V, 2nd Prize McLaren's Patent Motor Windlass (p 30)

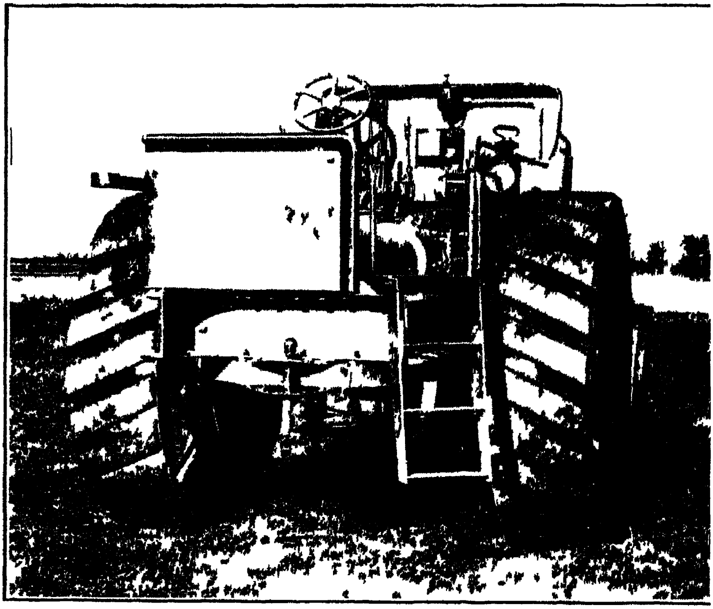

FIG 15.—CLASS V, 1ST PRIZE FOWLER MOTOR CABLE PLOUGH (p 30)

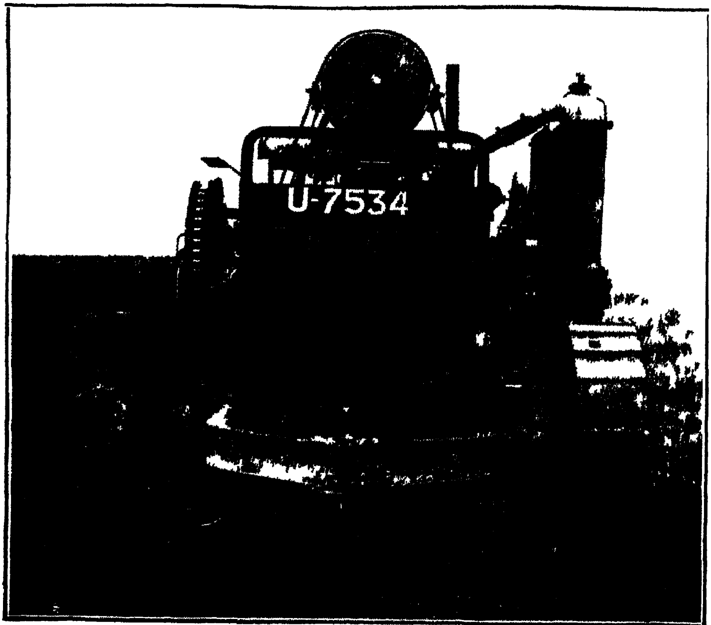

FIG 16.—CLASS V, 2ND PRIZE MCLAREN'S PATENT MOTOR WINDLASS (p 30)

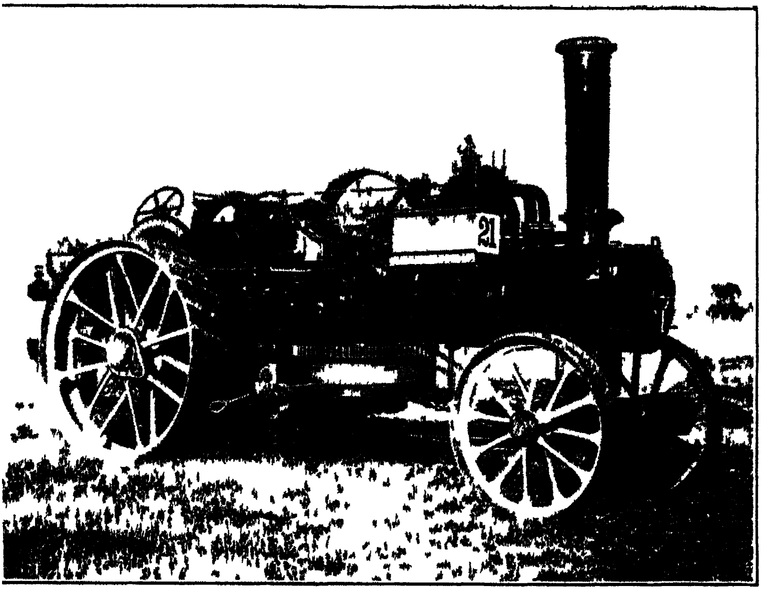

Fig. 17.—Class VI. 1st Prize. Fowler Class "DD" Steam Cable Plough (p. 31)

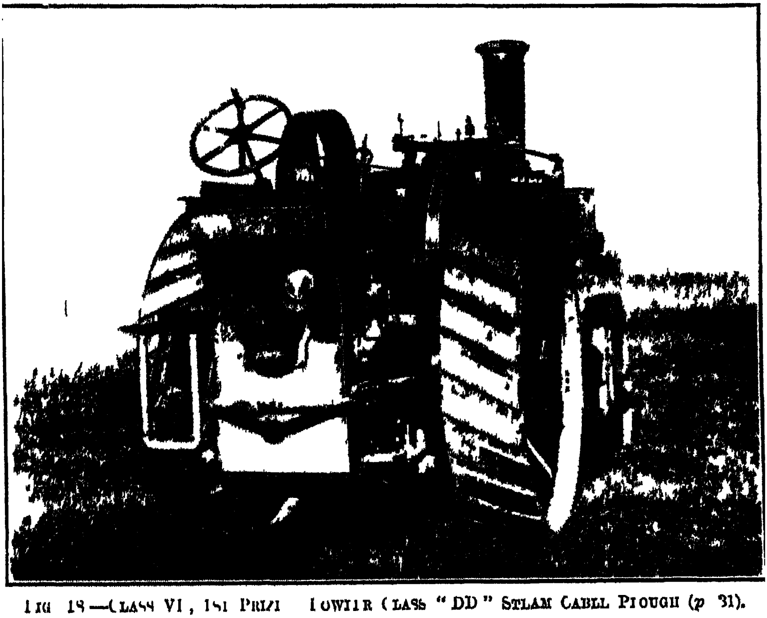

Fig. 18.—Class VI, 1st Prize. Fowler Class "DD" Steam Cable Plough (p. 31).

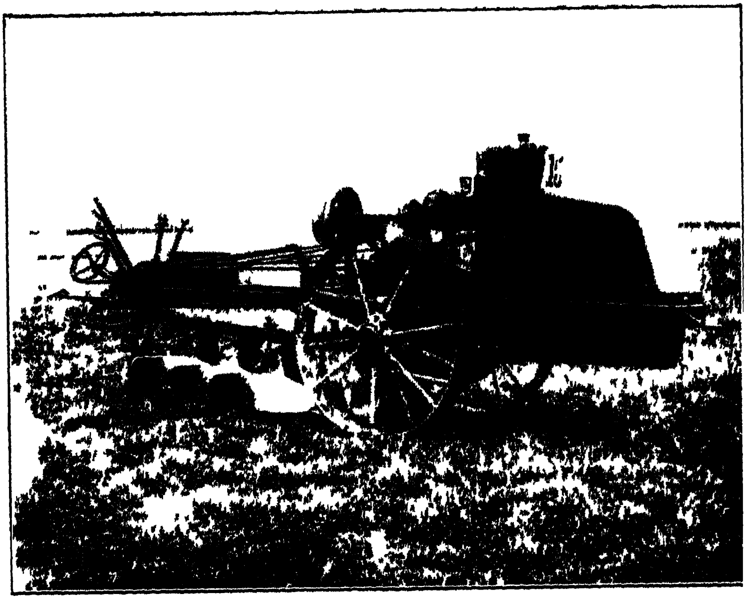

FIG 19.—CLASS VII, 1ST PRIZE CRAWLEY MOTOR PLOUGH (p 32)

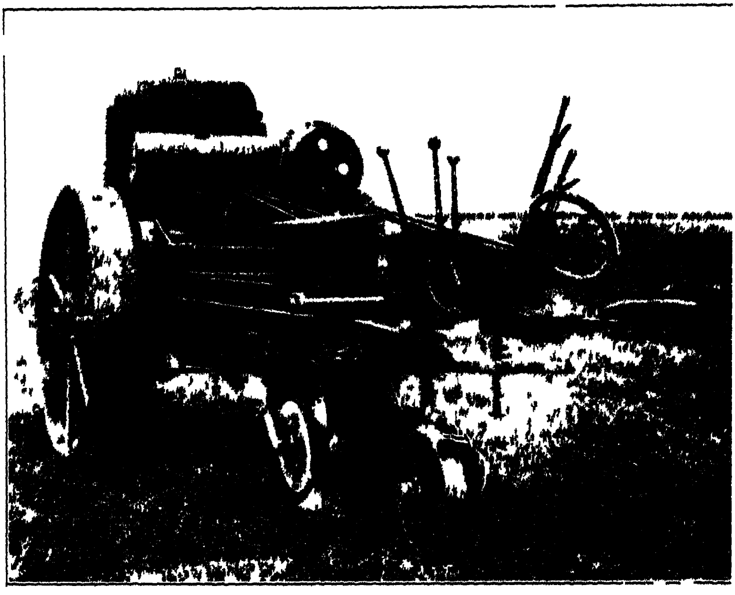

FIG 20.—CLASS VII, 1ST PRIZE CRAWLEY MOTOR PLOUGH (p 32).

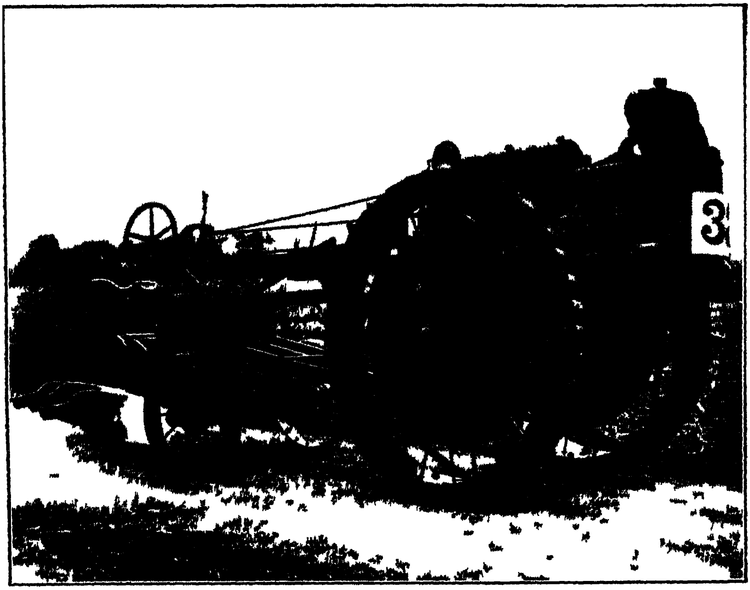

FIG. 21.—CLASS VII. 2ND PRIZE. MOLINE MOTOR PLOUGH (p. 35)

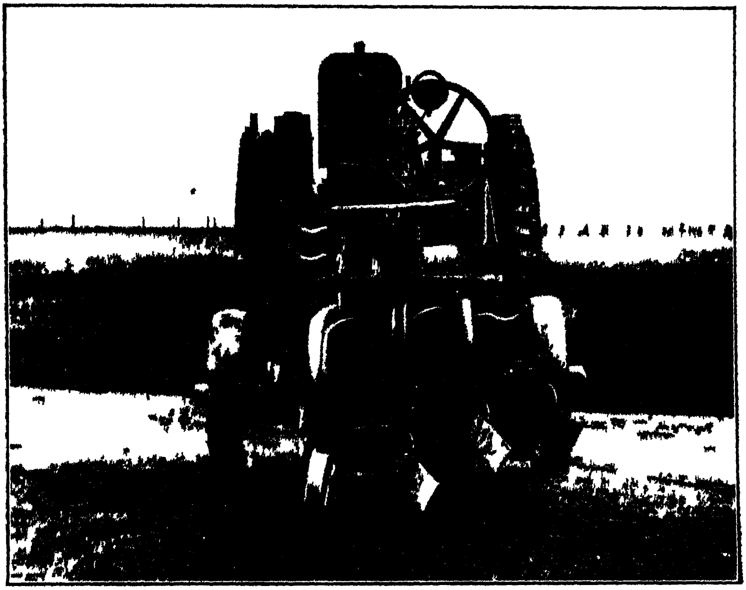

FIG. 22.—CLASS VII. 2ND PRIZE. MOLINE MOTOR PLOUGH (p. 35)

AGRICULTURAL EDUCATION IN DENMARK.

The writer was fortunate in being a member of the agricultural expedition that, under the auspices of the English Ministry of Agriculture, spent a month in Denmark, from June 25 to July 25, 1920. This article is compiled from first-hand information obtained during that tour.

In area Denmark is a little less than one-third of the size of England and Wales and less than one-half the size of Scotland. As compared with England it is a country of small farmers. A sixth of the whole of the land is in holdings of less than 35 acres, and two-thirds is in holdings of less than 150 acres. Since the beginning of the twentieth century the State has encouraged the establishment of these small farms by issuing cheap loans to the owners of newly-established small farming properties, and since 1900 more than £3,000,000 have been granted as direct loans for this purpose, practically all the farms now being freehold. They are worked in many cases solely by the farmer and his family. Although nearly 90 per cent. of the land of Denmark is under arable cultivation, the agriculture of the country is founded on cows. There are 46 cows for every 100 head of population, as compared with 10 cows per 100 head of population in England and Wales. The milk is sent to local creameries to be made into butter, or cheese, for export, so that the work of the creameries is of great importance. Bacon and eggs are also very important agricultural products.

The above considerations must be borne in mind in connection with the scheme of agricultural education for the country, and in tracing out this scheme it seems desirable to start with the boy at the Elementary School and gradually trace his career through various schools to the highly technical Royal Agricultural College at Copenhagen, finishing up with his work as a fully-qualified expert.

THE ELEMENTARY SCHOOLS.

Denmark is essentially an agricultural country and the writer expected to find a strong agricultural bias in the teaching in the Elementary Schools In this, however, he was disappointed. Education is compulsory, as in England, up to the age of 14, but there is very little Nature Study included in the curriculum and it is exceptional to find School Gardens attached to the schools. Some of the schools in the towns are provided with School Gardens for children who have no opportunity of learning gardening at home, but in the country the authorities argue that School Gardens are unnecessary. They do not seem to have realised the great value of School Gardens for educational purposes.

In the villages the schools are mixed, both girls and boys being taught in the same classes by the same teachers, and in most of the schools there are four classes, taught by two teachers, each having two classes. Class 1 will include children from 6 to 8 years of age; Class 2, children of 8 to 10; Class 3, children from 10 to 12; and Class 4, children of 12 to 14. There is a regulation that no class shall consist of more than 37 pupils. The school opens at 8 a.m. in the summer time, or at 9 a.m. in the winter time, and closes at 3 p.m. or 4 p.m. A full school day varies from 6 working hours for older children down to 4 hours a day for the youngest children. The children do not as a rule attend school every day of the week, though there is no fixed rule about this. In "the Islands" it is usual for each class to attend school every other day, *i.e.*, either on Mondays, Wednesdays and Fridays, or on Tuesdays, Thursdays and Saturdays, but in Jutland the elder children attend school on more days in the winter than in the summer, younger children attending on more days in the summer than in the winter. In this way the elder children are more free for working on the farms in the busy summer season. The arrangements vary according to local circumstances, but every class must receive instruction for 41 school weeks, averaging at least 18 hours per week, exclusive of time occupied in gymnastics, needlework and voluntary subjects. There are holidays at Christmas, Easter, Whitsun, and in the summer.

The number of pupils attending a country school is usually under 100 but in the towns it reaches 1,000, and in Copenhagen over 1,500, so that the number of classes is increased proportionately and the boys and girls are kept separate. In the towns the children attend school either in the morning or in the afternoon of every week-day, the attendance averaging 24 to 36 hours a week, and it is required that at least 21 hours' instruction per week be given, exclusive of extra subjects, drawing and cookery.

Compulsory subjects of instruction are reading, grammar, religion, writing, arithmetic, history, geography, singing, and for the boys gymnastics. In the country schools employing a lady teacher needlework for girls is also compulsory. In the towns drawing and, for the girls, gymnastics and needlework are compulsory subjects. Gymnastics, which take the form principally of Swedish exercises, are a prominent feature in all types of school in Denmark. Optional subjects are natural history, gymnastics (for girls), housewifery, mathematics and a foreign language (English or German).

There is no technical teaching nor any agricultural bias in the instruction given in the village schools; in fact the instruction is on the same lines as in the town schools, though the Head Teacher is usually given a good deal of liberty of action so that the details of the instruction vary a good deal in different schools. The Head Teacher lays his programme of instruction for the year before the local School Board, who approve, or otherwise, his proposals.

Denmark is divided for administrative purposes into a number of counties, and each county is divided into a number of communities. A community may consist of one, two or more villages (usually one village only) and is under the jurisdiction of a local Council with a local School Board consisting, in the country districts, of the minister of the parish as chairman, *ex-officio*, and about four members appointed by or from the members of the local Council. In the towns the chairman of the local School Board is appointed by the Board from its own members. The school belongs to the community and the expense of building and keeping the school in repair is borne by the rates levied by the local Council. The control of the work of the schools is in the hands of the local School Board, which is a sub-committee of the local Council, and the local Council appoints its own teachers, the appointments being subject to the approval of the Education Committee of the County Council. The salaries of the teachers are paid partly by the local Council, partly by the County and partly by the State.

CONTINUATION CLASSES.

At present there is no compulsory education after the age of 14, and the Education Authorities of Denmark are watching the effect of the new Education Act in England before raising the age to 16, or even higher.

The elementary school buildings are, however, used for voluntary Afternoon and Evening Schools. The teachers are the same as those employed in the Elementary School, and if the teacher is popular his classes are well attended. The writer was told, for example, of a small village of 300 inhabitants where 30 to 40 pupils regularly attend the Evening School. The local School Boards decide whether Continuation Classes shall be held in their schools, the subjects to be taught, and the number of evenings per week on which classes shall be held. The evening classes are usually held in the winter and extend over two hours, closing not later than 8 p.m. The instruction is free, and the subjects taught include history, geography, reading, writing, the Danish language, book-keeping, surveying, drawing, gymnastics, &c. The Continuation Classes for the boys and girls are usually held on different days of the week, and the subjects of instruction vary according to the district and whether the school is in the town or in the country. Pupils attend these classes up to the age of 18.

Difficulty has been experienced in the past in getting farmers to free their boys so that they can attend the Evening Classes, and a Bill will come before the Danish Parliament in the autumn (1920) by which, if passed, it will be illegal for any employer to hold back a boy or girl between the ages of 15 and 17 who desires to attend any of these classes. A stimulus will also be given to the classes by giving the local Councils money grants from the State covering 75 per cent. of the expenses, by supplementing the Elementary School teachers by the appointment of special teachers for special subjects, and by holding classes in the rural districts in the afternoons as well as in the evenings.

SECONDARY EDUCATION.

Children who wish to continue their whole-time education, after the age of 14, can enter one of the "Realskoler," which exist in all small towns, or a Higher School at the age of 10 or 12. The "Realskoler" are a type of school supplying children with instruction in geography, history, natural science, modern languages and elementary mathematics, up to the age of 16, and are intended for boys who intend to be bank clerks, &c., and wish to complete their education at that age. The Higher Schools educate children up to their eighteenth year and the pupils can choose between studying classics, mathematics or modern languages. Scholars who pass the final examination from one of these schools are qualified to enter the University at Copenhagen.

FOLKS' HIGH SCHOOLS.

A characteristic feature of the educational system of Denmark is the part played by the Folks' High Schools. There are about 100 of these schools, each taking from 30 to 300 pupils at each course, and they are all privately-owned schools supplying residential short courses of general instruction for men and women over the age of 18. In the year 1915, 2,411 male students and 2,695 women students attended these courses. No technical instruction is given except, in a few cases, in surveying and drawing. Their professed aims are solely moral, to give individual training on national and religious lines, to teach the pupils to love their country and to become better citizens than they were before and to prepare young men and women for the battle of life. At most of the Folks' High Schools there are two courses of instruction:—

(1) A five months' winter course for men, from November to April.

(2) A three months' summer course for women, from May to August.

The people who attend are of all ages from 18 to 30, come from all classes of society and usually have previously only attended an Elementary School, which they left at the age of 14. Most of the students will be the sons and daughters of farmers, but there will also be the sons and daughters of agricultural labourers and of the country clergy, and although the schools are always situated in the country there has recently been a tendency for townsmen, and especially townswomen, to attend the courses. Thus all classes, farmers' sons and labourers' sons, townsmen and countrymen, take the course together. The subjects taught include Danish history, the World's history, Danish literature, the World's literature, arithmetic, reading, writing, gymnastics, singing, &c. The women's courses also include instruction in embroidery and dressmaking. A special feature is always made of gymnastics, and an hour every morning is devoted to compulsory physical exercises, both for men and women. There is no technical teaching nor is any examination held nor certificate awarded at the end of the course. The usual fees are £5 per month. Prospective pupils who cannot afford to pay the full fees can apply for State scholarships which cover half the cost.

The writer had the fortune to visit the Askov Folks' High School when the women's summer course was in progress. The students get up at 7 a.m., have breakfast at 7.30, and receive instruction from 8 to 12 o'clock, when dinner is served. Work is resumed from 1.30 to 3 p.m., when there is an interval of a quarter of an hour for coffee, and then again from 3.15 to 7 p.m. with two short breaks of a quarter of an hour at 4.15 and 5.45. This is a typical day's work, and Saturday is the same as other days, for there is no half-holiday. In addition to this the students have exercises to do in their free time. Each lesson is opened and closed by the singing of a national song, as it is claimed that this draws the pupils together and creates the right atmosphere. No day students are admitted—daily association is an essential part of the course. Close sympathy is necessary between the instructor and his pupils, and the personality of the teacher is a matter of prime importance.

In spite of the fact that these are comparatively expensive courses, that there is no technical training, no higher wages to be earned afterwards through having attended the course, and a very strenuous course too, there is an enormous demand for this class of education, and about 10 per cent. of the whole population of Denmark passes through a Folks' High School course. At this particular school no fewer than 600 applications for last winter's course and 200 applications for this summer's course had to be refused. The schools have been described at some length because they illustrate the surprising demand for education that seems to exist naturally among all classes of the Danish people, and this demand will show itself again and again as this article proceeds. There seems to be a strong movement for education and advancement, woven with a desire for liberty of action, naturally ingrained in the Danish national character. The principles underlying the Folks' High School movement could surely be applied with advantage in the Continuation Schools now being established in this country.

SCHOOLS FOR SMALL HOLDERS.

At Odense the writer was able to see one of the three Schools for Small Holders that exist in Denmark. This particular School is intended to cater for the sons and daughters of small holders, and can accommodate about 75 pupils.

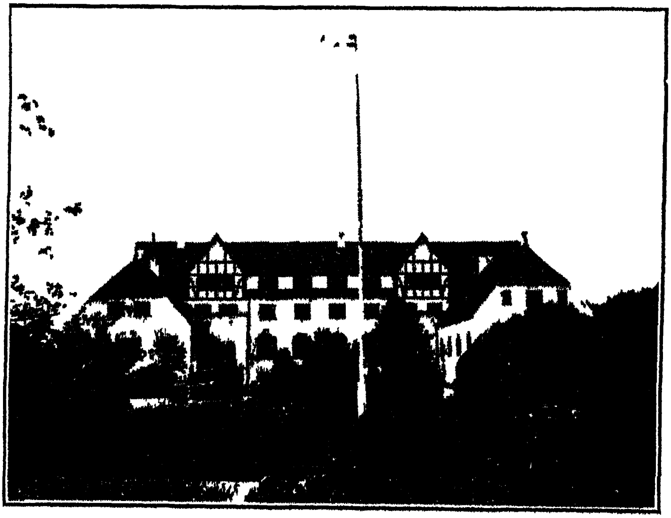

FIG 1.—Small-holders' School, Odense.

The instruction given is not purely technical, but an attempt is made to combine general education as given at a Folks' High School with the teaching of an Agricultural School; in fact, they are specialised Folks' High Schools giving technical instruction in agriculture. All pupils before taking a course have had at least three years' practical experience of farm work, and the majority of them have had no other education than that which they received in the village school. Most of the students at an

Agricultural School, on the other hand, have usually attended a course at a Folks' High School previously.

The average age of the students of the Small-holders Schools is 24 or 25. They seem to come of their own free will, without pressure from their parents; in fact, they save up their money to enable them to take the course. They frequently take a course just previously to starting on a farm or small holding of their own. They are no longer schoolboys, but realise the value of what they have come to learn, and settle down to their work accordingly. The Principal of the School at Odense is strongly in favour of students getting a taste of their future profession before completing their education or obtaining technical training, and he does not like students to come under the age of 20.

As a rule the students have very little money and cannot afford to pay the full fees of £4 to £5 per month. About two-thirds of them are therefore in receipt of scholarships from the State, covering half their expenses. Applicants for these scholarships have to fill in forms setting out their parent's income, the size of his farm, number of dependents, &c., and this application goes before the local Council, and from there to the State Board of the County Council, who act as agents of the State. If it is supported by the local Council the application will be successful. The State will never pay more than half the fees, as it is maintained that a student will take his work more seriously if it has involved some sacrifice to himself; in fact, he would never go to the school under these circumstances unless he meant to profit from it.

The courses of instruction at the Small-holders' School at Odense may be classified as follows:—

(1) A five months' winter course for men (November 1 to April 1).
(2) A three or five months' summer course for women (May 1 onwards).
(3) One or more one-month courses for Milk Recorders.
(4) Six-day, eleven-day, or one-month courses in various subjects for men and women.

There were 75 students attending last winter's course for men and 43 students attending the summer course for women which was in progress at the time of the writer's visit.

(1) *The Five Months' Winter Course for Men.*

The syllabus for this course includes instruction in Danish History and Literature, Sociology and Social Economy, Gymnastics, Arithmetic, Chemistry and Physics, Soil Study, the Improvement of Soils, Implements, Land Measurement, Plant

Life, Weeds and their Destruction, Rotations, Manuring, Anatomy and Physiology of Domestic Animals, the Judging of Livestock, Animal Breeding, Feeding and Management, Diseases of Animals, Farm Accounts, Fruit-growing and Poultry-keeping.

Excursions are occasionally made to neighbouring farms, but no practical farm work is included in the course, and the farm attached to the school is run solely as a source of revenue. No experiments are carried out on it, but the livestock are useful for lessons to the students in judging, and the crops and general management of the farm are available for inspection.

(2) *The Summer Course for Women.*

The women who attend this course are mainly the daughters of small-holders, but none of the courses are exclusive. Some of the men students taking the men's courses and some of the women taking the women's courses come from larger farms and mix with the sons and daughters of the small farmers. The students of different classes live together, even for the short courses, and the mixing of them together is held to be of great benefit.

The women students are not taught much agriculture, as the women do very little practical farm work in Denmark except to help at harvest time and in the busy hoeing season, nor do they need to learn the making of butter and cheese as this is always made by fully-trained men in the creameries. The women's course is therefore devoted mainly to instruction in cookery, dressmaking, &c., and the general education subjects taught in the Folks' High Schools. Every woman student, however, is given a small garden plot of 6 yards by 5 yards on which she is taught to grow various kinds of vegetables.

As with the men students, the working hours are from 8 a.m. to 12 noon (one class in the morning will always be Gymnastics), with 10 minute intervals at the end of each hour, 1.30 to 2.30 p.m. and 3 to 6 p.m. On Saturdays work ceases at 5 p.m.

(3) *Courses for Milk Recorders.*

There are 636 milk recording societies in Denmark and there is a constant demand for qualified male or female milk recorders. There is usually a one-month's course in April and another in October. The course includes instruction in the weighing of milk, testing with the Gerber Tester for butter fat, the keeping of milk and food records and the calculation of the amount of butter that would be obtained from each cow's milk supposing it were used for butter-making. An examination is held at the end of the course by an outside body of examiners, on the results of which certificates of proficiency are awarded.

(4) *Six-day, Eleven-day and One-month Courses.*

These short courses centre round instruction in such subjects as seed-testing, artificial manures, weeds and their eradication, grasses and clovers, poultry keeping, fruit growing, &c. Sometimes the courses are for men and sometimes for women, these being generally kept separate and held at different times. Nine or ten of these courses are held every year in this particular school, but in some schools as many as twenty courses may be held in a year, whilst one school devoted almost entirely to eleven-day courses is very largely attended. There are altogether ten or twelve different schools in Denmark holding these short courses. It is not possible to teach much in such a limited time, but discussions are held on subjects connected with the pupils' everyday life, and it is claimed that the pupils go home with new ideas and new interests, whilst the mere bringing of the people together has been found to have beneficial results in many directions. The cost of these courses is borne almost entirely by the State.

The staff of the school consists of a number of part-time persons who earn a part of their livelihood in other ways. Some of the members of the staff teach at the school in the winter and are employed as peripatetic expert advisers by the Smallholders' Society in the summer.

Attached to the school are 10 acres of land run by the Smallholders' Society as an experimental orchard, and this is in charge of one of the members of the school staff. There is also attached to the school a large building containing specimens of numerous kinds of up-to-date farm implements under the charge of another member of the staff. Small-holders come and inspect these implements and are able to get an unbiased opinion of the relative merits of the different makes before making a purchase. Implements to the value of about £7,000 are sold every year in connection with this display of implements, and during the summer between 3,000 and 4,000 small-holders visit the school, the implement collection and the experimental fruit orchard.

The poultry pens attached to the school are used as a breeding station for distributing sittings of eggs under a scheme similar to the English egg-distribution scheme. Trap-nesting is encouraged by the holding of annual egg-laying competitions. The successful competitors are selected as breeding centres for the following season, and in return for a subsidy from the State send out sittings of eggs to small farmers, &c., at reduced prices. All the eggs sent out under this scheme must be from trap-nested stock.

THE AGRICULTURAL AND DAIRY SCHOOLS.

There are nearly thirty agricultural schools in Denmark, all privately owned and taking on an average about 100 students each. The writer was able to visit two of them, the Agricultural and Dairy School at Dalum, which is considered the leading school of its class, and the Ladelund Agricultural and Dairy School.

The Dalum Agricultural and Dairy School was raised to its present high standard of efficiency by Mr. Jergen Petersen, and when he died in 1908 the school was purchased by the Past Students Association. The principal of the school is responsible to this Association, and it is of interest to note that last spring Mr. Madsen-Mygdal, the principal, was selected by the Prime Minister to be his Minister of Agriculture. Mr. Madsen-Mygdal is now a member of the Danish Cabinet with a seat in the Landstinget (House of Commons).

As in the case of the small-holders' schools, all students are required to have had at least 3 years' practical experience on a farm before attending an agricultural school. They vary in age between 18 and 30, but they are not encouraged to come before they are 20. They are expected to have had a good general education and most of them will already have passed through a course at the Folks' High School. The teaching is therefore entirely confined to the sciences connected with agriculture.

There are about 100 acres of land attached to the school, but this is farmed solely as a source of profit and no experiments are carried out except an occasional small trial conducted by a research student. The students do no practical work on the farm, nor even any practical work in carpentry or iron work.

The students come from farms of all sizes, from small holdings up to large estates, but the majority of them from farms of 30 to 100 acres. Some of them may have already passed through a small-holders' school. The inclusive cost of the course is £4 to £5 per month, and students who cannot afford to pay the full fees make an application for a scholarship in the way already described. Usually about one-third of the students at the agricultural schools are holders of scholarships covering half the cost of the course. The schools receive no direct help from the State except a very small grant of £50 to £125 a year, varying with the size of the school.

The present equipment at Dalum includes a large lecture theatre, two smaller lecture rooms, two plant-breeding rooms, a bacteriological laboratory with three microscopes, a small chemical laboratory with one good balance, a small natural history museum, a large gymnasium, a large implement demonstration shed, and a good football ground.

There are two main courses of instruction given at Dalum, (1) the agricultural course and (2) the dairying course. Only male students are accepted as a rule for either course, though very occasionally there may be a female student, in which case she will usually lodge with one of the members of the staff. The students attending the two courses are kept quite apart, so it is desirable to consider the two courses separately.

(1) *The Agricultural Course at Dalum.*

Up to the present time the agricultural course at Dalum has been a six-months' course from November 1 to May 1, and in the summer there has been a three-months' continuation course for those students who desired to stay on longer. During this continuation course each student has a particular subject to specialise in and may carry out some investigation work on the farm attached to the school, but he does not do any ordinary manual work.

The students are divided into four groups for gymnastics, book-keeping, drawing and arithmetic, three groups for Danish composition and two groups for *viva voce* examinations.

Every pair of students shares a bed-sitting room. They get up at 7 o'clock, put their rooms in order, and have coffee at 7.30. Lectures start at 8 o'clock and there are four hours of instruction, one of which will be in gymnastics, from 8 to 12 o'clock, with ten-minute intervals between each. Then comes dinner at 12 o'clock and the students are free until 1.30. Then come two more hours of instruction from 1.30 to 3.30, half an hour for coffee, and two more classes from 4 to 6 p.m., when supper is served. Thus there are eight hours of indoor work a day, including an hour of physical exercises—say seven hours a day. On Saturdays work ceases at 3.30.

The number of hours of instruction given in each subject in the agricultural course is as follows:—

	Hours		Hours
Danish Language	28	Seeds and Seed Testing	8
Drawing	30	Implements	31
Sociology	17	Farm Crops	56
Arithmetic	48	Book-keeping	64
Physics	50	Surveying and Levelling	14
Inorganic Chemistry	60	Dairying	16
Organic Chemistry	20	History of Agriculture	24
Botany	34	Farm Economy	28
Study of Soils	28	Judging of Livestock	33
Draining, Liming, &c.	20	Anatomy	36
Meadow and Moor Cultivation	10	Feeding of Livestock	34
Manures	55	Horses	24
Rotation of Crops	4	Cattle	38
Tillages	19	Pigs	14
Weeds and their Eradication	12		

It is interesting to note that more time is devoted to book-keeping than to any other subject. Up to the present practically no laboratory work has been done by the students, but in future it is proposed to replace the six-months' course with a nine-months' course which will include a considerable amount of laboratory work. The classes will be smaller and laboratory instruction will be given in chemistry, botany and bacteriology. The school will then only be able to take 120 students instead of 180. It has always been recognised that a six-months' course is not long enough, but the difficulty in retaining students during the busy summer months has up to the present been considered insuperable. However, the increased attendance at the continuation course has encouraged the school now to make a definite effort to lengthen the course so that fuller instruction and more individual attention may be given, and more practical work done with living plants.

(2) *The Dairying Course at Dalum.*

Up to the present this has been an eight-months' course (October to May) for men who have already had at least four years' practical experience in a creamery. No practical instruction is given in either butter or cheese making; the students are expected to know that part of the work before coming to the school. The hours of work are the same as for the agricultural students.

When the students first arrive they are set an examination in arithmetic, and as a result of this examination they are divided into different classes for arithmetic and Danish. In both the agricultural and the dairying courses about one hour in every four is devoted to questions and answers in the different subjects of instruction, a kind of *viva voce* examination.

The number of hours of instruction given in the different subjects is as follows:—

	Hours		Hours
Danish Language	52	History of Dairying	13
Drawing	46	Anatomy	48
Arithmetic	72	Foods and Feeding	58
Physics	50	Book-keeping	66
Inorganic Chemistry	56	Creamery Accounts	25
Organic Chemistry	26	Creamery Machinery	60
Bacteriology	77	Dairying	120
Practical Work in Chemistry and Bacteriology	62		

There are no diplomas nor certificates awarded at the end of the agricultural courses, as the students merely return to their farms, but at the end of the dairying course a final examination is held and certificates of proficiency are awarded. These certificates enable the holders to improve their position in the creameries.

(3) *The Agricultural Courses at Ladelund.*

The Ladelund Agricultural and Dairy School, which was also visited by the writer, is very similar to the school at Dalum, the only difference being that the agricultural course is of five months' duration (November to March) instead of six months, with a four-months' summer continuation course (April to July). At this continuation course, which may only be attended by students who have attended a winter course either at Ladelund or elsewhere, the same subjects are studied but in greater detail; there is practical laboratory work in chemistry and physics, some practical surveying, judging of livestock, excursions to farms, &c. The students are also given written work to do. Questions are set them which they may answer after consulting books in the library; in other cases the questions have to be answered without help.

(4) *The Dairying Course at Ladelund.*

The dairying course at Ladelund is exactly the same as at Dalum, and the students take the same examination at the end of the course. These are the only two agricultural schools in Denmark that give a systematic dairying course.

(5) *The Milk Recorders' Course at Ladelund.*

Special short courses of instruction for milk recorders are given at the Ladelund Agricultural and Dairy School in addition to the longer agricultural and dairying courses. Both male and female students can attend this course, but they must have previously taken a course at a Folks' High School.

Some of these students will be sufficiently trained at the end of one month; others require two or three months. At the end of the course an examination is held, and four grades of certificates are awarded—excellent, very good, good and fair. This examination is the same for all schools where milk-recording courses are held, so that milk recorders throughout the country can be graded according to the certificates they hold. Milk recorders come from practically all classes of society—many of them are farmers' sons who have passed through an agricultural school and want a year's practical experience of different methods of cow-keeping before settling down on a farm of their own. Roughly, one quarter of the milk recorders in Denmark are women.

Up to 1912 similar special courses for milk recorders were held at Dalum, one in May and one in November, but all the information required by milk recorders can now be obtained in the three-months' summer course in dairying. At the end of this course the same examination is held as at Ladelund, and certificates are awarded.

OTHER AGRICULTURAL SCHOOLS.

The writer did not see any of the other agricultural schools, but he was informed that they are very similar to those at Dalum and Ladelund. Some have as many or even more students, but the majority are smaller. The staff also is not normally quite so large—at Dalum the staff consists of 13 men—but the standard of teaching is considered to be nearly as high. The fees are practically the same at all the agricultural schools.

Some of the best of the students from an agricultural school pass on to the Royal Agricultural College at Copenhagen. No State scholarships can be obtained to the Royal Agricultural College. Scholarships can, however, be awarded to students at the Royal Agricultural College after they have been there six months on the recommendation of the professors of the College.

HORTICULTURAL SCHOOLS.

There are three Horticultural Schools in Denmark, one in the Province of Jutland, one in Funen, and one near Copenhagen. The writer was unable to see any of them, but was informed that they are very similar to the Agricultural Schools. Five or six month winter courses are held at these schools, with a voluntary continuation course in the summer.

THE ROYAL AGRICULTURAL AND VETERINARY COLLEGE, COPENHAGEN.

The Royal Agricultural and Veterinary College, established as a State institution in 1856, is the College in Denmark where the most scientific form of agricultural instruction is taught. It is a non-residential college, so that all the students have to live in lodgings in Copenhagen. It consists of a magnificently equipped set of buildings, with an excellent library of 60,000 volumes, museum, laboratories, lecture rooms, &c. It is now being very considerably enlarged, and it is expected that the extension will take at least four years to complete.

The College is situated in Copenhagen, and has no farm attached to it. The same rule is enforced as at the Agricultural Schools; that no agricultural or horticultural student may take the course until he has had at least three years' practical experience on a farm.

All instruction given in the College is based on the general knowledge presumed to have been acquired by the students at a secondary school. The normal education of boys at the secondary schools ends either at the age of 16, when they pass out after sitting for an examination including at least two foreign languages (generally English and German), or at the age of 18, when they sit for an examination which gives admission to Copenhagen University. These two examinations can also be taken by boys who have not attended a secondary school, but have been privately coached, and it is compulsory on all students wishing to take the veterinary, forestry, or land surveying courses at the Royal Agricultural College first to pass one of these examinations. Students for the agricultural or horticultural courses may at present be admitted to the College without having passed such an examination, but they are not eligible for scholarships and they have not the right to sit for the examination at the end of any of the four extension courses. From now onwards, however, it will be compulsory for all students in all courses to pass a qualifying entrance examination including two foreign languages.

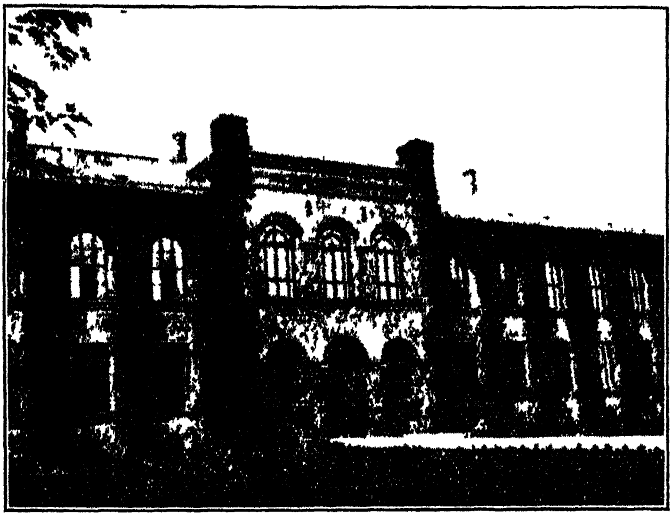

FIG. 2.—Royal Agricultural College, Copenhagen.

No students can enter the College until they are 21 years of age. They have the choice of five different courses of instruction :—

1. The Veterinary Course.
2. The Forestry Course.
3. The Land Surveying Course.
4. The Agricultural Course.
5. The Horticultural Course.

It is intended shortly to add a sixth course—a Dairying Course. The students in all these different branches take practically the same course during the first year. The Veterinary students study applied sciences in their second and third years and are engaged in practical work in their fourth and fifth years. The Forestry students study applied science in their second year, do practical work in their third year and more applied science in their fourth and fifth years.

It will be desirable to consider the Agricultural and Horticultural Courses in some detail.

(1) *The Agricultural Course.*

The Agricultural Course consists of two parts, the first part embracing instruction in the natural sciences and the second part in the applied sciences.

The first part of the course occupies 18 months and is divided into three terms, the subjects taught and the number of hours per week devoted to each being as follows:—

	1st Term. Sept. 1 to Jan. 31	2nd Term. Feb. 1 to June 15	3rd Term. Sept. 1 to Dec. 21
Lectures.—			
Physics and Meteorology	5	5	—
Chemistry	5	4	—
Agric. Chemistry	—	—	2
Geology	—	4	—
Botany and Agric. Botany	4	4	2
Micro-Biology	—	—	2
Study of Heredity	—	—	2
Zoology	5	1	—
Anatomy and Physiology	—	3	4
Sociology	—	—	5
Practical Work.—			
Chemistry	9	9	—
Agric. Chemistry	—	—	6
Physics	—	—	2
Botany and Bacteriology	1	3	6
Drawing	6	6	
Surveying and Levelling	4	2	
	39	41	31

At the end of the first 9 months (*i.e.* in June) examinations are held in Chemistry, Zoology and Geology, and these sciences are then finished with. In July the students spend a whole month in doing practical surveying and levelling in a large park about 4 miles out of Copenhagen, working every day with the chain, level and theodolite from 8 a.m. to 5 p.m., and they take the examination in the subject at the end of it. They then have 2 months' holiday, returning to their lectures on or about September 1. They take the examinations in the other subjects at the end of the third term, *i.e.* in December. Until a student has passed the examinations in all these subjects he cannot proceed with the second part of the course. It is not usual for more than 50 per cent. of the students to pass successfully, and those who fail usually leave the College.

The second part of the course begins on February 1, and lasts 13½ months. There are three terms, February 1 to July 15, September 1 to January 31, and February 1 to March 15. The subjects taught and the number of hours devoted to each per week are as follows:—

	1st Term. Feb. 1 to July 15	2nd Term. Sept. 1 to Jan. 31	3rd Term. Feb. 1 to March 15
Lectures.—			
Agric. Zoology	2	—	—
Plant Pathology	2	2	—
Implements and Machinery	3	3	5
Cultivation of the Soil	5	5	2
Animal Breeding and Management	4	5	2
Dairying	2	2	1
Agriculture in other countries	—	1	1
General Land Management	4	5	1
Diseases of Livestock	—	2	—
Practical Work.—			
Implements and Machinery	2	3	—
Building Construction	—	—	2
Soil Tillage and Plant Life	—	3	1
General Land Management	—	1	2
Dairying	—	1	—
Agricultural Chemistry	6	—	—
Judging of Livestock	—	2	3
Diseases of Livestock	—	—	3
	30	35	23

Four lectures are given every morning between 8 a.m. and 12 noon with 10 minute intervals between each. Twenty minutes are allowed for lunch, and then there are 2½ hours of laboratory work and another lecture from 3 to 4 p.m. At the end of the course the final examinations are held and those students who are successful receive a Diploma written in Danish, English, French and German.

In future it is intended to lengthen the course by another 12 months as well as to institute a compulsory entrance examination.

On the completion of the Agricultural Course, as set out above, there are four Extension Courses in—

(*a*) Fundamental Sciences,
(*b*) Plant Husbandry,
(*c*) Animal Husbandry, and
(*d*) Dairying.

Each of these Extension Courses commences every other year in September and closes with an examination 20 months later in March or April. No student may, however, sit for this examination unless he passed the qualifying examination when he first entered the College, and unless he obtained a First Class Diploma at the end of the normal 2½ years College Course.

The students who take the agricultural course are usually the sons (occasionally daughters) of farmers, large and small. About 90 per cent. of them have already passed through an Agricultural School. Those who fail in the examination at the end of the course generally return to their farms, while those who are successful in getting the diploma generally obtain posts afterwards as teachers or lecturers at Agricultural Schools, or as experts under an Agricultural Society.

The fees are purely nominal, about £1 per term with an additional £2 per term for laboratory expenses and another small charge for examination fees, but students have to pay for their own board and lodging. The College belongs to the State, and in the year 1919-20 the cost of the College to the State as a teaching institution was £22,250.

At the outbreak of the war there were 42 agricultural students at the College, last year 61 students took the examinations and this year there are 128 students. The number this year is unusually large because it is the last year for taking the old and shorter course without a compulsory qualifying examination.

(2) *The Horticultural Course.*

The Horticultural Course is also taken in two parts. The first part is practically identical with the first part of the Agricultural Course and the students for the two courses work together. The second part is a 12 months' course from February 1 to January 15. It is divided into two terms, and the subjects taught, with the number of lectures given in each per week, is as follows :—

	1st Term. Feb. 1 to June 30	2nd Term. Sept. 1 to Jan. 15
Lectures.—		
General Horticulture	4	3
Cultivation of Pot Plants	3	2
Fruit Growing	3	3
Cultivation of Ornamental Plants	3	
Nursery Work	—	3
Cultivation of Useful Plants	—	3
Greenhouse Work	2	—
Horticultural Botany and Plant Diseases	5	2
Horticultural Zoology	2	—
Book Keeping	—	4
Practical Work.—		
Practical Chemistry	6	—
Practical Botany	2	—
Designing of Gardens	6	6
Other Gardening Operations	2	2

The Danish Government Seed Testing Station, which last year tested 24,400 samples of seed and is very nearly self-supporting, is situated in the grounds of the Royal Agricultural College, but is quite an independent station, with its own directors. There are, however, two institutions which are attached to the Royal Agricultural College and which merit consideration, namely, the Agricultural Experiment Laboratory and the Serum Laboratory.

(3) *The Agricultural Experiment Laboratory.*

The Agricultural Experiment Laboratory has carried out and is carrying out a great deal of experimental work throughout the whole of Denmark in connection with the manufacture of butter and cheese, the feeding of livestock, the curing of bacon, &c. It started in 1875 with a series of experiments, carried out at the request of practical farmers, with a view to finding out how dairymen should store their ice, and later on as to how the creameries could best make use of their ice. Experiments were carried out in numerous creameries throughout the country, and the whole policy in relation to experimental work has always been to carry it out on the farms and the creameries themselves, under conditions that correspond exactly with those under which the results are intended to be applied. It was largely due to experiments carried out by this laboratory that cream separators were introduced so quickly into Danish creameries, and that every creamery provided itself with a pasteuriser and a cooler, and began to use selected starters for acidifying the cream.

The laboratory is also useful to the creameries by reporting to them on the quality of their butter. To begin with, the creameries used to ask for these reports to be made, but now it is laid down by Act of Parliament (1911) that all creameries *must* send samples of their butter to the laboratory whenever they are called upon to do so, and if the report on the butter is unsatisfactory the creamery is forbidden to export any further butter until a satisfactory report is received.

The Danish method of valuing feeding stuffs according to the number of feeding units was evolved as a result of numerous feeding experiments, carried out under the guidance of the laboratory by farmers, on their own cows, in their own cowsheds, and under everyday conditions. It was also due to experiments carried out under similar conditions that the Danish farmer has now developed the practice of growing mangels on a large scale as a winter food for his cows.

The motto of the director of the Agricultural Experiment Laboratory is "Keep always close to the farmer," a motto which might perhaps with advantage be followed more closely by some of the research stations in this country. It may be argued that experiments carried out in this way on commercial farms instead of under strictly scientific conditions cannot give such accurate results as they would if they were carried out in a cowshed adjoining the laboratory and under the Director's own immediate supervision, but on the other hand the loss in accuracy can usually be counterbalanced by repeating the same trial on a very large number of cows and on numerous farms, instead of only on a few cows and in a single cowshed, whilst the farmers' confidence in the results is much more quickly won when they see the trials actually carried out under ordinary farm conditions. All experiments are, therefore, carried out, as far as possible, in commercial creameries and on ordinary farms. The necessary materials are placed by the owner at the disposal of the laboratory free of charge, but the latter pays all the expenses directly connected with the experiments.

The whole of the work carried out by the laboratory is paid for by the State; the grant received for the year 1920-21 amounted to about £17,000. There is no creamery nor cowshed attached to the laboratory; the equipment consists solely of administrative offices, chemical, bacteriological and physiological laboratories, store-rooms, &c. It was in the bacteriological division that Professor Bang carried out his famous researches that have laid the foundation for the fight against tuberculosis in cattle.

In order to keep the work of the laboratory as closely in touch as possible with practical agriculture, representatives of practical dairy managers and farmers are invited to meetings which are held at regular intervals to receive reports of the work done, and to discuss future experiments. To make the collaboration between the laboratory and the practical farmers still more complete, two Commissioners have recently been appointed, one for the creamery work and one for the animal husbandry work, both sound business men, who have had a scientific training. These two Commissioners are more easily brought together than the large committee, and it is their duty to suggest to the laboratory new objects for experiment and to approve of experiments proposed by the laboratory.

The physiological division of the laboratory has recently been equipped with a respiration chamber and apparatus, erected just before the war, at a cost of about £2,500. With the aid of this apparatus researches can be made to determine, with absolute accuracy, how animals utilise their food, and to elucidate innumerable problems in connection with animal nutrition. This is the only respiration chamber that has yet been built to take a cow, and there are many ingenious contrivances for feeding the animal, milking her and collecting the milk, liquid urine and solid excreta, without opening the air-tight chamber.

(4) *The Serum Laboratory.*

This laboratory is used for the production of vaccines for the prevention and treatment of animal diseases, such as white scour in calves, swine erysipelas, broncho-pneumonia and septic-pneumonia in calves, strangles in horses, joint-ill in foals, lock-jaw, &c. These vaccines are produced on a large scale, and a stable containing several horses, which are periodically inoculated and after a certain time tapped at the jugular vein for the blood from which vaccines are made, is attached to the Laboratory. The vaccines, when prepared, are sent out to all parts of Denmark, and sold at very low rates. The Laboratory is State-supported, and cost the State in 1919-20, £2,200.

THE STATE AGRICULTURAL EXPERIMENT STATIONS.

There are six Agricultural Experiment Stations in Denmark belonging to the State, and the writer was able to visit five of them. These stations are as follows:—

Place	District	Size acres	Soil	Speciality
Lyngby	E. Seeland	130	Clay Loam	Weeds and diseases of plants.
Tystofte	W. Seeland	80	ditto.	Plant breeding. Cloverand grass seed production.
Aarslev	Funen	85	ditto.	Production, storage and use of farmyard manure.
Askov	S. Jutland	60 145 14	Loam Sand Moor	Rotations and soil treatment. Dung compared with Artificials.
Studsgaard	S. Jutland	150 110	Sand Moor	Cultivation of heath land. Experiments with soiling crops.
Tylstrup	N. Jutland	220 90	Moor Sand	Cultivation of high moor. Experiments with draining, liming and common fertilisers. Potato breeding.

There are also two small branch stations in Lolland and Bornholm.

The administration of the State Experiment Stations is done by a State Committee (the Planteavlsudvalg) consisting of five members elected respectively by the Royal Agricultural Society of Denmark, the Associated Agricultural Societies of Denmark, the Royal Agricultural College, Copenhagen, the Co-operative Danish Small-holders Societies and the Co-operative Danish Horticultural Societies, and approved by the Ministry of Agriculture. This Committee forms the connecting link between the Ministry of Agriculture and the Experiment Stations, approves the schemes of experiments laid before it, publishes the reports and Journal (*Tidskrift for Landbrugets Planteavl*), and supervises generally the whole of the work.

Each station is under the charge of a Director and there is a Central Committee composed of the Director from each station which prepares the experiment programme of each station for submission to the State Plant-Breeding Committee. In many cases the same experiment is carried out at several different stations and extends over a series of years, *e.g.*, experiments which are of interest to the whole country and not merely of local interest, and in these cases the Committee of Directors nominates one person to be responsible for the whole series of experiments and it is his duty to superintend them, collect the results, and write up the report on the particular trial as soon as it is completed. The *Tidskrift for Landbrugets Planteavl*, of which the Secretary of the State Plant-Breeding Committee is editor, is issued five or six times a year, each number containing 150 to 200 pages, and in this journal the results of the experiments are published. This journal is sent out to all subscribers of 7*s.* 6*d.* per annum.

The results of the more important experiments are also published separately in book form as reprints, and short reports are issued for distribution at farmers' meetings, for use in the Agricultural Schools and for publication in the daily and agricultural newspapers.

At all the Experiment Stations the size of the experimental field plots is always very small, usually only 30 square yards, but each plot is duplicated at least six times. There are thus an enormous number of plots on each farm. At the Aarslev Station, for example, there are no fewer than 2,976 different plots on the 85 acres of land. Each of these has to be dealt with separately and a staff of 18 labourers is necessary. It is claimed, and probably with truth, that these small plots duplicated many times give more accurate results than larger plots because the soil conditions are more similar and there is the further important advantage that a very large programme of experimental work can be concentrated in a small acreage. The outside row of each plot is always discarded.

The total expenses of the State Experiment Stations in 1917–18 were roughly £33,000; of this sum £20,000 was recovered in sales, and the deficit of £13,000 was made good by the State. In 1919–20 the deficit was approximately £20,000.

Space prohibits the writer from going in detail into many of the interesting experiments that were seen in progress at the State Experiment Stations. The majority of them are of more than local interest and are continued over a series of years; experiments of purely local interest, such as simple manurial trials, are as a rule left to the Local Agricultural Societies for their field trials on private farms (*see* page 90).

At four different stations the writer saw varieties of mangel seed submitted by 24 different seedsmen being grown on these small plots, 6 yards by 5 yards, ten or twelve times duplicated. The seed is sown at double the usual rate so as to ensure getting a good plant and no misses, the plants being thinned out later to the proper distance apart. The resultant crops are weighed, the roots sampled and analysed, and the results calculated out in tons of dry matter per acre. This experiment extends over two seasons and then the results from the different stations are brought together and those varieties that have given the worst results are discarded. The seedsmen selling the strains that have given the best results are asked to send in a further sample of the same stock so that in the third year two samples of each of the better strains may be tested. At the end of the third year the names of the strains that have given the best results are published. Originally the trials only lasted 1 year, but from 1911 up to the present time each trial has been carried over 3 years at several stations before any results are published. In future it is intended to carry each trial over 4 years before publishing the results; after the second year the inferior strains being rejected and two new samples of each of the better ones being grown for 2 years in their place. The names of the owners of the rejected strains are not published, but the practical result of these trials is that only seed of strains that come out well in them remain on the market. Imported seed has been proved inferior to the best strains produced in the country. Instead of the innumerable varieties of mangel that used to be on the market a few years ago there are now only about six varieties, no imported seed is used, and the average yield of the mangel crop throughout Denmark has increased from 16 tons to 21 tons per acre.

Variety trials are a common feature of all experimental programmes, but in Denmark this subject of investigation is carried further by trials not merely of varieties, one against another, but of different strains of the same variety, many of which were first produced at one of the State Experiment Stations. A great deal of work of this nature has been done with wheat with the result that the average wheat crop in Denmark has risen since 1895 from 31 bushels to 43 bushels per acre. Very little work, on the other hand, has at present been done on barley and oats and in consequence the average yield of these crops has remained stationary during recent years.

A great deal of work has been done at the State Experiment Stations since 1908 on the production of grass and clover seeds. Formerly Denmark used to import most of her seeds from abroad, but it has now been found that home-grown grass and clover seeds are better than the imported, especially since new strains of cocksfoot, rye grass, timothy and other grasses and clovers have been bred, and improved by careful selection. The practical result of this work is that whereas in 1895 Denmark imported 9,000 tons of grass and clover seeds at a cost of £360,000, in 1919 there were no less than 78,000 acres of land in Denmark devoted to the production of clover and grass seeds, and she now has a very large export trade.

Another series of trials that has been carried out simultaneously at several of the Experiment Stations has been a trial of various clover and grass-seed mixtures to get the heaviest crop in a 2-years' ley. As a result of these trials there are now two or three standard mixtures for different types of soil and these are practically the only ones found in use in Denmark.

A useful piece of work carried out by the State Experiment Stations is in connection with checking the purity of the seed of root crops exported abroad. An arrangement has been made with the seedsmen by which before shipment of the goods an authorised weigher draws three samples, one for the purchaser, one for the seller and one for the State Root Seed Commissioner. The latter sample is sown at one of the State Stations and if later on a complaint is received from the purchaser as to the pedigree or purity of the strain, the crop in the testing plot affords a valid proof of the quality of the seed that was sent out.

The experiments with farmyard manure at Aarslev are particularly interesting. Cow manure is used for the experiments, and although there is a group of cows for each experiment the cowshed is fitted up so that the solid manure as well as the liquid manure of each individual cow is kept separate. Similarly the food fed to each individual cow is weighed and analysed and the comparative analyses of the droppings from each cow at once detect any abnormal cows. Special pits have been made in concrete, each 3½ ft. by 4 ft. by 6 ft. to receive the manure, one for each cow, and the liquid manure in most cases is stored separately in an airtight tank underneath. The contents of each pit are then applied to separate plots of land. In this way the experiments are designed to test the effects of feeding various amounts of cake on the composition and crop-producing power of the dung, the best amount of litter to use, the best method of storing the dung, the best time to apply it to the land, the effect on the crop of different-sized dressings of dung, the effect on the crop as compared with artificial manures, &c.

At Studsgaard there were some interesting experiments showing that certain strains of swedes are more resistant to finger-and-toe than other strains and other experiments to find out the quantity of lime or chalk required to prevent the disease. The soil at this station is of a very light sandy nature and some very interesting experiments in green manuring were in progress. It has been found, for example, that a seeds mixture of kidney vetch and grasses mown for hay and then ploughed in, with a nitrogenous manure applied to the succeeding corn crop, gives a more economical return than ploughing in green lupins.

THE STATE HORTICULTURAL EXPERIMENT STATION.

There are three Horticultural Experiment Stations in Denmark, one of 70 acres at Esjberg, one of 150 acres at Odense, and one of 80 acres in the North of Jutland at Aalborg, but the writer was only able to visit the one at Esjberg, a part of which was originally run by the Local Agricultural Society until the State took it over and extended it in 1909. It is intended shortly to start another station near Copenhagen for greenhouse work.

These stations are devoted to testing and experimenting with fruit trees, bush fruit and vegetables, and some plant-breeding is also being done. Denmark is behind the commercial fruit-growing districts of England in horticulture, and the experiments were devoted mainly to trials of different varieties of apples, gooseberries, currants, raspberries, strawberries, potatoes, beetroots, tomatoes, podding peas, &c.

A systematic survey is being made of the whole of Denmark to find out what varieties of apples are being grown by farmers in different localities, in what quantities and with what success. As soon as this survey is completed it is intended that the most commonly grown and the most popular of these varieties shall be tried side by side at the State Horticultural Experiment Stations.

AGRICULTURAL HISTORY MUSEUMS.

Attached to the Agricultural Schools at Dalum and Ladelund and at Lyngby are three Agricultural Implement Museums, the property of the State, which the writer was able to visit. These Museums contain most interesting historical collections showing the gradual development of ploughs, wagons and other agricultural implements used in the olden days, with pictures, models, and charts illustrating the development of Danish agriculture. They are open to the public on Sundays and are visited by a large number of people, especially in the summer months. The cost to the State of maintaining these

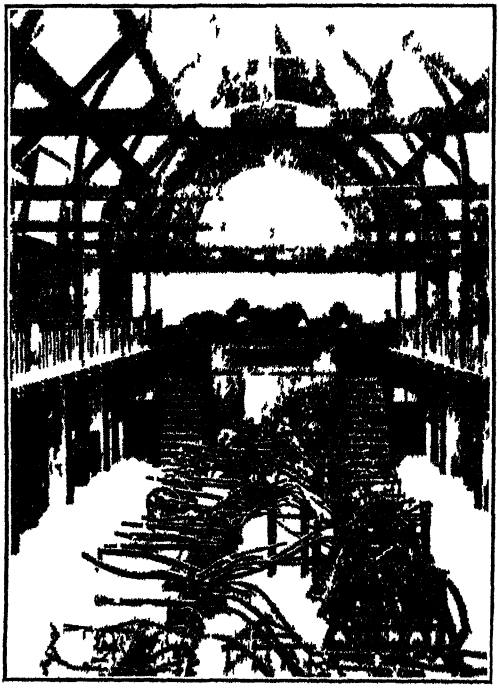

Fig 3.—Interior of Agricultural History Museum, Dalum.

Museums amounted in 1919-20 to £1,500. It seems a great pity that there is not at least one Agricultural History Museum in England; there is yet time to collect together, in good condition, many of the old wooden implements that were used in the days of our forefathers. Wales, it should be noted, has already laid the foundations of such a collection at its National Museum.

THE WORK OF THE LOCAL AGRICULTURAL SOCIETIES.

Denmark is famous for its co-operative methods and for the work of its Local Agricultural Societies. There are altogether 137 Local Agricultural Societies, with 114,184 members, and these are amalgamated in each province (Jutland, Seeland, Funen, Lolland-Falster, and the Isle of Bornholm) into Provincial Agricultural Societies, whilst the five Provincial Agricultural Societies are brought together into one Associated Agricultural Society. In addition to this Society there is the Royal Agricultural Society of Denmark which will be dealt with separately (*see* page 97), the Associated Small Holders' Society (74,000 members), the Danish Farmers' Association or Dansk Landmandsforening (a partly political body with 35,000 members started in 1917), the Farm Account Society (1,350 members), and almost innumerable co-operative societies with single definite objects such as:—

Livestock Societies, e.g.—340 Horse Breeding Societies with 29,000 members, 1,116 Bull Societies with 26,800 members, 636 Milk-recording Societies with 15,000 members, 1 Poultry-raising Society with 11,000 members.

Manufacturing or Sale Societies, e.g.—1,235 Co-operative Dairies with 180,000 members, 46 Co-operative Bacon Factories with 156,000 members, 550 Egg-export Societies with 45,000 members.

Supply Societies, e.g.—1,600 Co-operative Stores with 244,000 members, 1,280 Feeding-stuffs Societies with 70,745 members, 2 Artificial Manure Supply Societies with 73,000 members.

Cultivation Societies, e.g.—2 Potatoes Cultivation Societies with 18,200 members, 8 Sugar Beet Cultivation Societies with 6,930 members, 1 Danish Heath Society with 9,400 members.

Insurance Societies, e.g.—1,050 Livestock Insurance Societies, 14 Hail Insurance Societies with 78,000 members, 7 Storm Insurance Societies with 91,900 members.

Credit Societies, e.g.—168 Short Loan Societies with 21,600 members, 1 Danish Co-operative Bank with 15,000 members.

The Local Agricultural Societies co-operate with the above societies and their work can be classified under the following headings:—

1. The carrying out of Field Experiments.
2. Lectures and Demonstrations.
3. Cost Accounting.
4. Livestock Shows.
5. The granting of premiums for the best cultivated farms, especially small farms, and the organising of excursions.
6. The encouragement of various Associations for special purposes.

The Local Agricultural and Small Holders' Societies carry out a very considerable amount of agricultural education work of their own, employing their own scientific experts for the purpose. The Jutland Provincial Agricultural Association, for example, has a small 20-acre experiment farm of its own where four full-time experts are employed on plant-breeding, and in addition there are employed 60 local scientific agricultural and horticultural advisers in different parts of the province.

The other provinces are very much smaller than Jutland, and between them they employ about 45 scientific experts. Most of these experts are engaged exclusively by the Agricultural Societies, but some are engaged conjointly by the Agricultural and the Small Holders Societies and about 10 are engaged exclusively by the Small Holders Societies. They are often old Royal Agricultural College students and are employed full time in educational work, giving lectures, organising field trials, arranging educational exhibits at shows, organising implement demonstrations, &c. In a very few cases they are part-time men, in which case they usually have a small farm of their own which occupies their attention when they are not being employed by the Society.

The State is prepared to pay half the cost of all educational work carried out by the Agricultural or Small Holders Societies so long as the society pays the remainder, and the State is content to exercise very little control over them. No doubt it is argued that if the farmers are prepared to pay half the expense themselves, it is a sufficient guarantee that good and useful work is being done. Formal plans of the experiments, &c., contemplated, should in theory be submitted in writing to the State before the work is started, but in practice an invitation is merely sent for a representative of the State to attend the meeting of the Agricultural Society when the year's programme is being discussed. At the end of the year the society submits an account showing the salaries of their experts and the cost of their work, and payment to the extent of one-half of this account is then made.

(1) *The carrying out of Field Trials.*

All field trials are set out by the local expert personally, and he is present at the end of the experiment when the crops are being weighed. The number of local field experiments carried out by the Agricultural Societies during recent years is as follows:—

Five Years	Fertiliser Trials	Other Trials	Total
1896–1900	849	31	880
1901–1905	3,856	534	4,390
1906–1910	7,287	3,430	10,717
1911–1915	8,497	3,737	12,234
1916–1920	7,800	3,711	11,511

The number of local field experiments is now 2,000 to 3,000 annually. Largely as a result of these demonstration plots the value of the annual import of artificial manures into Denmark has increased from £145,000 in 1900 to over £1,100,000 in 1914 as the following statistics of the Danish import of fertilisers and raw materials for the production of fertilisers will show :—

	Nitrates	Phosphates	Potash	Total Value *
	Tons	Tons	Tons	
1900	5,700	33,800	11,200	161,000*l.*
1905	12,100	68,000	13,800	317,000*l.*
1910	26,400	99,000	14,000	583,000*l.*
1914	54,000	203,000	23,700	1,244,000*l.*

* Pre-war rate of exchange, 18 kroners to the pound sterling.

At the end of each year an annual joint meeting is held in each province of all the Local Agricultural Societies in the province that have carried out experimental work. The results are presented to the meeting in a collective report and plans are made for the next season's experiments. These provincial meetings are followed by a meeting where representatives from each province meet the State Plant-Breeding Committee and the directors of the State Experiment Stations, and at this meeting the whole of the experimental work that has been carried out in the country is brought together and discussed.

(2) *Lectures and Demonstrations.*

The experts are required to give lectures to meetings of farmers and usually these take the form of single lectures given four or five times a year at the Society's meetings. Sometimes short courses of instruction are arranged. A course lasting over a fortnight may be held at convenient centres where systematic instruction can be given. There will as a rule be two lectures a day and a 2-hours' lesson in the keeping of farm accounts. Latterly some of the Local Agricultural Societies have organised implement demonstrations for their members.

(3) *Agricultural Costings.*

A recent development of the work of the Agricultural Societies has been in cost accounting. The first sporadic experiments made by local societies comprised only a few branches of farming industries and were not supported by systematic balance sheets, but since 1910 these investigations have been carried out in a complete and reliable manner by expert accountants employed and paid by the societies. There are a few Farm Costings Societies working independent of the Local Agricultural Society, but as a rule the cost accounting will be under the direct control of the agricultural society in the district. The State gives financial assistance on condition that :—

(1) The system of accounts is approved by the Provincial Agricultural Society.
(2) The accounts comprise all sections of the agricultural industry.
(3) The results are checked and published each year for the benefit of the public.

Until 1917 the results of the investigations were as a rule published separately by each individual local society, but in 1916 on the initiative of the Royal Agricultural Society of Denmark, a special committee was formed with the object of establishing a uniform system of keeping and compiling these accounts, and in 1918 an Office for Agricultural Economics was set up at the headquarters of this committee. The number of completed farm accounts and balance sheets that have been analysed in this office during the 3 years that have elapsed since its establishment is :—

1916–17	...	75.
1917–18	...	235.
1918–19	...	312.

The following table shows the returns of the 235 farms whose accounts were analysed for the year 1917–18, tabulated according to the size of the holdings :—

	Below 25 Acres	25 to 50 Acres	50 to 75 Acres	75 to 125 Acres	125 to 250 Acres	Over 250 Acres	Mean
No. of Farms .	11	42	68	70	29	12	
Average size, acres	17·0	37·7	63·2	95·0	168·5	467·7	99·5
	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Capital per acre .	53 16	54 8	56 17	53 13	48 18	47 6	53 9
Gross Profit per acre .	16 18	16 15	16 10	15 12	14 5	14 0	15 18
Expenses, including farmer's labour, taxes, &c	13 10	11 11	11 7	10 8	9 15	9 14	10 19
Net Profit per acre .	3 8	5 4	5 3	5 4	4 10	4 6	4 19
Interest on Capital per cent. . .	6·4	9·6	9·1	9·8	9·3	9·1	9·2

The above figures show that in the year 1917–18 the smallest farms averaging 17 acres each grew crops worth the most money per acre, but that the expenses were excessively high, so that these small farms made less net profit per acre than the larger-sized farms. The most profitable farms were those between 25 and 125 acres. The interest on the capital invested averaged about 9 per cent., varying but little according to the size of the various farms except the very small farms of less than 25 acres, where the net profit was only 6½ per cent. on the capital invested.

CORRESPONDING FIGURES FOR THE YEAR 1918–19 ARE AS FOLLOWS :—

	Below 25 Acres		25 to 50 Acres		50 to 75 Acres		75 to 125 Acres		125 to 250 Acres		Over 250 Acres	
No. of Farms . . .	24		51		78		95		38		19	
Average size, acres . .	16·3		39·3		61·2		94·8		163·3		501·0	
	£	*s.*	£	*s.*	£	*s.*	£	*s.*	£	*s.*	£	*s.*
Capital per acre . . .	61	12	55	4	56	11	50	16	50	4	45	4
Gross Profit per acre . .	25	4	20	7	19	12	17	18	16	16	15	16
Expenses, including farmer's labour, taxes, &c. . .	18	7	13	1	12	12	11	5	10	11	9	11
Net Profit per acre . .	6	17	7	6	7	0	6	13	6	5	6	5
Interest on Capital per acre .	11	1	13	2	12	4	13	0	12	5	13	8

The Capital per acre includes the taxable value of the land and farm buildings (about 35 per cent. below the market values) and the value of the livestock (about 30 per cent. below their market value) and dead stock (actual cost price less depreciation, about 60 per cent. below to-day's market value). On the whole the Capital is about 36 per cent. below sale value. The Gross Profits represent sales, the value of milk, &c., consumed in the farm-house, and also the increase in the valuation at the end of the year. Expenses include the farmer's own labour and his family's on the same scale as hired labour plus an allowance for managing the farm. The calculations have been based on the pre-war rate of exchange, *i.e.*, 18 kroners to the pound sterling; the present rate of exchange is 25 kroners to the pound.

For the year 1919–20 the figures for about 400 farms are expected to be available. The Office for Agricultural Economics is staffed by a director, an assistant director and three other assistants. The Government subsidy last year was £1,100.

(4) *Agricultural Education Exhibits at Shows.*

Another feature of the educational work of these societies is the educational exhibit at many of their Local and all their Provincial Agricultural Shows. There are three kinds of agricultural shows in Denmark :—

(1) The Local Agricultural Societies' Shows. For all kinds of animals.

(2) The Provincial Agricultural Societies' Shows. For young stock under 3 years of age.

(3) The State Agricultural Shows. For bulls over 3 years of age and stallions over 4 years of age.

There are a large number of local shows but only one provincial show in each province. The writer visited two of these summer shows, the Jutland Provincial Show at Kolding and the Seeland Provincial Show at Naestved, and he was much impressed by the exhibits in the agricultural education tent.

At the Seeland Show there was a large wooden shed, 38 yards by 11 yards, devoted entirely to the educational exhibits. Including other exhibits were growing plants of different varieties of wheat, barley, oats, rye, mangels, swedes, turnips and carrots, with samples of their seed and the yields obtained in previous years' field trials, tables showing the results of trials with various strains of mangels submitted by different seedsmen (*see* page 85), growing specimens of different kinds of grasses and their seeds, the results of trials with different strains of white clover, alsike clover, kidney vetch and yellow trefoil, the results of trials with seed of early red clover obtained from different countries, the results of numerous potato-spraying experiments, the effect of different-sized dressings of lime on finger-and-toe in swedes, maps showing the distribution of various cultivated crops throughout the province and the average yields during the past five seasons, growing specimens of weeds indicating sour or wet land, specimens of tools used in draining lands, tables showing the effect of draining in yield per acre on the crops grown and a list of places where lime could be purchased and at what price. Outside the tent was a piece of land laid out for draining, with the pipes laid and the connections made. The

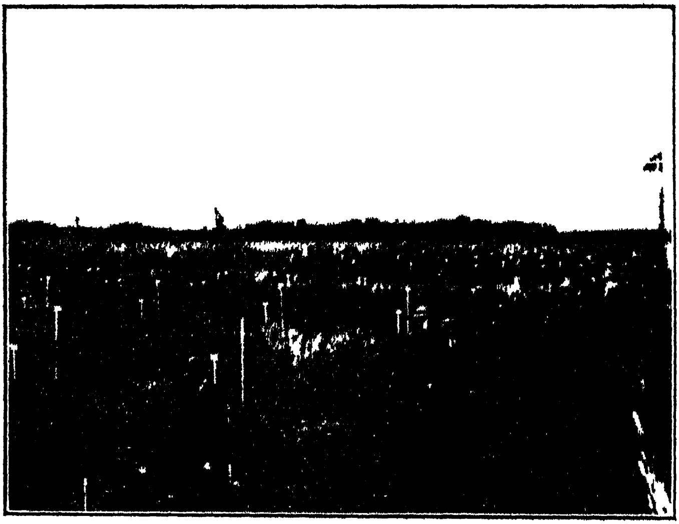

FIG. 4 —Demonstration Plots, Jutland Provincial Show.

whole exhibit was in the charge of a number of demonstrators, who were busily occupied throughout each day of the show in explaining the exhibits to the large number of people who thronged the tent.

An equally large tent 30 yards by 13 yards was utilised for the educational exhibit at the Jutland Show and the exhibits were of a similar nature. Large cardboard models of roots of different sizes were used for showing the effect of different manures on the root crop and a conspicuous feature of the exhibit was a series of tables showing the result of agricultural costings on ten different farms in Jutland. Behind the tent was a piece of land, nearly 2 acres in extent, laid out in little plots, 5 yards by 4 yards, each demonstrating a different variety of wheat, barley, oats, rye, pea, mangel, swede, potato or clover or the effect of different manures or different soil cultivation. There were between 500 and 600 of these plots, all carefully labelled, which had been laid out during the previous 12 months specially for this occasion. They were visited by large numbers of farmers and here again a number of demonstrators, experts employed by the Society, were available, constantly giving addresses bearing on the different plots.

The writer did not have the opportunity of visiting any of the numerous local shows or of the fourteen State shows, but he was informed that similar exhibitions, on a larger or smaller scale, are set up in connection with many of the local shows though not at the State shows.

One other feature of the agricultural shows is the importance attached to the value of milk records. The judges will not award a prize to any bull which cannot show the milk records of its mother, and they are influenced by the milk records in making their awards. Similarly no cow may be exhibited unless she belongs to a milk-recording society, and all the milk records, with the fat percentages, are printed in the show catalogue. At the provincial shows there are classes for family groups of cattle, the progeny of one cow or the progeny of one bull, and these classes are better filled than the classes for individual cows. Here again the milk records have to be stated, and the judges, in awarding the prizes, consider the record of each cow and the uniformity of the group, as well as their individual appearance. There are also classes for herd groups, the number of cattle to be shown varying with the size of the owner's herd. Milk-recording has become very popular in Denmark, and one cow in every six now belongs to an officially recognised milk-recording society, where the milk of each cow is weighed and analysed once every two or three weeks by a milk recorder. In many cases the weighing of the food is also included in the milk recorder's duties. The effect of the milk-recording societies in gradually raising the average milk yield of the cows in Denmark is shown by the following figures —

Year	No of Herds Milk recorded	No of Cows Milk recorded	Yield of Milk per Cow per annum	Percentage of Fat
1905–06	8,463	139,644	663	3·45
1908–09	9,372	163,275	672	3·50
1911–12	10,071	167,723	692	3·51
1914–15	12,823	200,064	693	3·54
1915–16	14,306	209,027	713	3·60
1917–18	14,417	193,688*	522*	3·60

* Reduction owing to the impossibility of getting concentrated feeding stuffs

(5) *Premiums for the Best Cultivated Farms.*

The Local Agricultural Societies often offer premiums for the best cultivated farms or small holdings and organise visits for their members, under expert guidance, to different places.

(6) *Encouragement of Various Associations for Special Purposes.*

There are numerous associations in Denmark formed for special purposes. A number of them have already been enumerated on page 89, and others are Pig Breeding Associations, Goat Breeding Associations, Tuberculin Societies, Cattle Export Societies, Co-operative Sale Societies for Livestock, Co-operative Potato Flour Societies, Co-operative Sugar Factories, Co-operative Marling Societies, Seed Cultivation Societies, Chicory Cultivation Societies, Plantation Societies, Fire Insurance Societies, Insurance against Accident Societies, Credit Societies, Horticultural Societies, Fruit Cultivation Societies, Co-operative Fruit Sale Societies, Bee-keepers' Associations, &c.

THE WORK OF THE DANISH HEATH SOCIETY.

Some reference must be made to the work of the Danish Heath Society, which was originally started as a private society for purchasing barren heath land in Jutland and promoting its cultivation by the construction of roads, irrigation canals and light railways, by bringing and ploughing in marl, by cultivating the best of the land and planting up the remainder as woodland. This society is now in receipt of considerable State support, in return for which it raises and distributes every year at reduced rates between ten and twelve million plants for hedges, gardens and small plantations, it arranges the transport of marl for those who require it (in 1914 alone 650,000 cubic yards of marl were carried on these marl railways), it has established two large permanent experimental stations to demonstrate methods of cultivating marsh land, and it gives written advice to all who apply for it. A very interesting day was spent with the director of this Society in visiting land reclaimed from heath. It was evident, however, that much of the reclamation work that has been carried out is not an economic proposition, but that the State is spending large sums of money, and even using convict labour, for reclaiming derelict land in order that it may carry a larger population.

THE WORK OF THE ROYAL AGRICULTURAL SOCIETY OF DENMARK.

Some account must also be given of the work of the Royal Agricultural Society of Denmark. This Society was established in 1769 and has 11,000 members, consisting mainly of large landowners, agricultural experts, directors of co-operative societies, business men, &c. The ordinary farmer does not as a rule belong to this society. The work of this society includes :—

(1) The practical education of young men on farms.
(2) The extended (practical) education of dairymen.
(3) The distribution of medals and money prizes to farmers and agricultural labourers who have distinguished themselves.
(4) The administration, on behalf of the State, of the work of certain State Commissioners.
(5) The carrying out of subsidised implement and machinery tests.
(6) A bureau for agricultural excursions.

The activities of the Royal Agricultural Society of Denmark cover all branches of agriculture, and the Society is frequently employed by the State as an advisory board.

(1) *Agricultural Apprenticeships.*

Nearly 100 years ago the Royal Agricultural Society of Denmark organised an apprenticeship scheme for teaching lads practical farming. Up to 1913 about 2,400 young men had been trained in this way. The scheme now in existence may be considered under three headings :—

(*a*) Training on large farms.
(*b*) Training on small farms.
(*c*) Training in the management of livestock.

The training on large farms is extended over 3 years, each year being spent on a different farm in order that the student may gain a large and varied experience. The instruction is essentially practical, but the Society also encourages theoretical learning by sending to each student a certain number of scientific books, which he is allowed to keep after he has finally and successfully passed his examinations. He has to submit to the Society every year a diary showing how his time has been spent, and he is visited occasionally on the farm by representatives of the Society. In order to obtain one of these apprenticeships a candidate must be at least 17 years of age. During his apprenticeship he receives an allowance of £8 to £12 a year in addition to his board and lodging.

The course on small farms extends over 2 years instead of 3 years, and in addition to his board and lodging the apprentice receives an allowance of about £9 in his first year and £11 in his second year.

The course in stock management lasts for 3 years, and is spent on two farms. The farmer boards and lodges the pupil, and pays him £9 for the first year, £10 for the second year, and £12 for the third year. The apprentice must do all the work he is ordered to do, learn to milk, to understand feeding, to clean and take charge of the animals, to kill pigs and perform similar tasks.

(2) *Dairying Apprentices.*

There is a similar scheme for the training of dairymen. In 1919–20 a sum of £1,250 received from the State was divided among 100 persons desirous of learning dairying or improving their knowledge by means of bursaries, enabling them to study in selected dairies inspected by the Society, or to make short educational tours. The Society has to satisfy itself that applicants are likely to benefit from the facilities to study that are granted them before approving of their application.

(3) *Rewards for Good Service.*

The Society awards silver cups to farmers who have specially distinguished themselves by converting derelict land into land capable of producing good crops. It also gives prizes to labourers who have shown particular skill in certain classes of work or who have served their masters for a long term of years.

(4) *The Administration of the Work of Certain Technical Advisers.*

Normally the State has no direct relationship with their Agricultural Advisers although the latter are State officials. The State deals with them only through the medium of the Royal Agricultural Society, and the Technical Advisors send to the Society every year a report of their activities. The following is a list of the State Agricultural Advisers that exist at the present time :—

One in Agricultural Chemistry.
Two ,, Plant Culture.
Four ,, Animal Husbandry.
Four ,, Dairying.
Two ,, Agricultural Machinery.
One ,, Horticulture.
One ,, Plant Diseases.
One ,, Agricultural and Forestry Zoology.

The Adviser in Plant Diseases was the only one that the writer was able to meet. He has his headquarters at the Lyngby State Experiment Station, where he is provided with some land on which he can carry out experiments. He travels throughout the country giving advice wherever required, and in the winter time his services are available two or three days a week for lectures to farmers' meetings, on payment of a fee of about £1, plus his travelling expenses.

(5) *Implements and Machinery Tests.*

From 1872 to 1892 it was the practice to hold comparative trials of certain classes of agricultural implements in connection with large farmers' meetings, but as these gatherings were held several years apart, and there was a growing interest in agricultural machinery, the State in 1892 set aside a small sum of money to be expended year by year in the testing of agricultural machinery. These State-subsidised tests are administered by the Royal Agricultural Society, through a special committee, and the money available has as a rule been apportioned so that the greater part of it is spent on the larger competitive tests, whilst a portion of it is placed at the disposal of the State Adviser in Agricultural Machinery to use for single tests as a preparation for, and in connection with, the larger competitive tests. The results of the tests are published in book and pamphlet form. Most of the implements used in agriculture have been included in the tests at one time or another, whilst some of the most commonly used implements of husbandry have been tested on several occasions during recent years as improved forms have been put on the market.

(6) *Agricultural Excursions.*

Excursions to model farms, creameries, &c., are organised by the Royal Agricultural Society. In 1919–20 a sum of nearly £10,000 was expended in prizes for small-holders and travelling expenses incurred in visiting various places. The writer has been informed, since returning home, that the State subsidises even to the extent of compensating the small farmers for loss of time due to being absent from their farms while studying farming elsewhere.

The Central Agricultural Board.

In 1919 a Central Agricultural Board, called the Landbrugsraadet, consisting of two representatives of the Royal Agricultural Society of Denmark, five representatives of the Associated Agricultural Societies, and five representatives of the Central Co-operative Committee of Denmark was formed, to which it is expected shortly to add five representatives of the Associated Small-holders Societies. The objects of this Central Committee, representing all the chief agricultural organisations in Denmark, are:—

(1) To promote co-operation between the technical and economic branches of the various agricultural societies.
(2) To advise the State on questions concerning agriculture, and to submit proposals that in the opinion of the Central Committee will be beneficial to agriculture in general.
(3) To keep in touch with agricultural experts in other countries, and
(4) To fight against anti-social trusts and monopolies.

This Central Committee, which is a private body, has only been set up quite recently, so that it is not yet possible to judge of its work.

CONCLUSION.

Comparing agricultural education in Denmark with that in England the leading distinction is that in Denmark students are required to gain practical experience of farm work before they come to the school and a farm attached to the school is considered unnecessary. It has always been a vexed question in this country whether agricultural students should go straight from school to an agricultural college or should first put in a year or more on a farm. There are strong arguments on both sides, but for the concentrated farm institute courses the case in favour of the students having first to obtain practical experience on a farm seems indisputable, and educationists may well ask themselves whether, apart from its value to the farmers of the county for field demonstration purposes, a farm attached to the Farm Institute, which is frequently occupied by male students only during the winter months, is really necessary. The writer has always maintained that the County Farm Institute, with its very limited residential accommodation and heavy maintenance expenses, is too expensive an institution for giving instruction in manual operations which can be learnt satisfactorily on many farms in every county, and that it should be a place where the peripatetic scientific staff of the County Council can give a condensed but systematic course of scientific instruction, such as cannot be given elsewhere, to students who already know the practical side of farming, with the idea of developing their powers of observation, explaining the "reasons why" of the things they have already learnt, giving them a comprehensive understanding of the principles underlying soil cultivation and manuring and the feeding of livestock, and creating a thirst for further knowledge and an interest in scientific literature.

A farm attached to the Farm Institute is useful for many purposes, but if a County Council cannot see its way to secure a farm there seems no reason why the whole scheme of a Farm Institute should be held up; in the writer's opinion the provision of lecture rooms and laboratories is more important than land.

The impression left on the writer when he quitted Denmark was one of progress. The Folks' High Schools are overflowing, the Agricultural Schools are lengthening their courses; the Royal Agricultural College is enlarging its buildings; plant-breeding and selection is improving the yield of wheat and mangels year by year; the effect of milk recording is gradually raising the milking capacity of the cows; the annual export of eggs has risen from 145 million to 1,120 millions in 20 years. Everywhere there is a forward movement. Barley, oats and potatoes are now about to receive the attention of the State Experiment Stations with a view to raising their cropping capacity. The State Experiment Stations do the pioneer work, the demonstration plots under the direct control of the agricultural societies bring the results to the notice of the farmers. The writer can still hear the advice of the Director of the Agricultural Experiment Laboratory ringing in his ears: "Keep always close to the farmer," and that seems to be at least one of the secrets of success of this forward movement in Denmark. In England the wheat crop has averaged 32 bushels per acre for many years. How much longer are we going to be satisfied to stand still? The English farmer has a very different temperament from that of the Dane and he has different conditions to contend with. He is not fond of education; he does not like reading, but his attitude towards the scientific man and the results of scientific experiments has altered perceptibly during recent years. If farmers' clubs and branches of the National Farmers' Union could be given a direct interest in field demonstration.

plots by encouraging them to organise this work themselves, in the writer's opinion a great step forward would follow. Co-operative methods and the fostering of agriculture, the sole industry of the country, by the State Government are of course other contributing factors to the prosperity of agriculture in Denmark.

Before concluding the writer desires to record his very best thanks to the following gentlemen who have most kindly and liberally, often at much trouble to themselves, supplied him with the information contained in this article and in some cases have read through and corrected the proofs:—Messrs. C. F. A. H. Graae and F. Hasserees (Elementary Schools and Folks' High Schools), Jakob E. Lange (Smallholders' Schools), Th. A. Jensen (Agricultural Schools), H. O. G. Ellinger (the Agricultural and Veterinary College, Copenhagen), E. Lindhard (The State Experiment Stations), L. Frederiksen (Agricultural Associations), O. Larsen (Agricultural Costings), Dr. Vincent Naser (Chairman of the International Students Bureau which organised our visit), and H. Lund, an old student of the Royal Agricultural College, Copenhagen, who acted as interpreter to our party throughout our journeys. Wherever we went in Denmark we received a warm welcome, and we owe a great debt of gratitude to the gentlemen mentioned above, and to many others too numerous to name, for their kindness and assistance in giving us the information we required and in making our visit a pleasant and profitable one.

G. H. GARRAD.

Sessions House,
Maidstone.

THE INDUSTRIAL UTILISATION OF THE POTATO.

I.

THE principal use of the potato in this country has always been for human food. Together with milk it enjoys the distinction of being the only important article of diet in which this country is self-sufficing, for although there is a considerable importation of "new" potatoes from some parts of the Continent of Europe and certain other places, the supplies are relatively unimportant, and the great bulk of the population are dependent on the home-grown article. In glut years there has ever been a certain export trade.

Prior to the war potatoes were not used for any purpose in England other than that of supplying the table and of providing a certain amount of feeding stuffs for farm livestock, although some years since there were a few very small factories existing in the North for the purpose of making potato starch.

Certain other countries have, however, developed large industries for the utilisation of the potato for a variety of purposes other than that of direct consumption in its natural form as food, and the Continental farmer in many places has found it a remunerative crop to grow solely for industrial purposes. In Holland the statistics show that in the five years prior to the war about one and a quarter million tons of potatoes were employed annually in factories producing farina (potato starch). In Germany the average production of potatoes in the same period was about fifty-three million tons per annum, the bulk of which went into factories engaged in the production of farina, potato flour, alcohol for industrial and other purposes, syrups of various kinds, and a variety of other products. The German production contrasts with a total yield in Great Britain of about two and a half million tons per annum over the same period, or 11 tons per 100 acres of agricultural land in this country compared with 55 tons per 100 acres in Germany. It has indeed been asserted that Germany could not have made war had it not been for the huge reserve of food material, both for human consumption and for farm livestock, represented by her potato production for industrial use in times of peace.

Although there have been a few small attempts, as stated above, to establish potato manufactures in this country, it was the war which was the means of really focussing attention upon the subject. In the first place, there was a shortage of wheaten flour for bread-making, and potatoes were proposed for use in the bakehouse as a partial substitute. The utilisation of the whole potato for this purpose, however, was not a success, for the baker was not equipped to use raw potatoes, and it was found also that deterioration of the tubers set in rapidly in the bakehouse store, so that this experiment was quickly stopped. It was then proposed to turn the potatoes into a flour in factories erected in the districts of potato production, so as to give the baker material in a form to which he was accustomed, and to save the cost of transporting the tubers with all their natural moisture.

A shortage of potato products was being experienced at the same time in other ways. Potato starch, or farina as it is called, is a necessary article in the textile trades, where it is used for dressing and finishing cotton cloth, and as this material had been manufactured only on the Continent, in Holland or Germany, the war had stopped supplies. The country's requirements in the shape of farina for textile purposes were such as to utilise the product from about 400,000 tons of potatoes annually. These facts led to the erection of some large factories on the East Coast in potato growing districts for the purpose of making farina and cattle foods from the potatoes.

There was also a shortage of starch at the cordite factories, starch being one of the necessary raw materials for making cordite, and the factories concerned had to resort to the use of maize, rice, &c., which were useful foodstuffs, and it was hoped that these farina factories would provide the cordite works with the starch they required, whilst the Government and the manufacturers concerned had also in view the capturing of a trade, namely, farina manufacture, which was up to then almost wholly German.

II.

The first industrial use to be considered is the preservation of potatoes by simple drying processes. A number of factories exist on the Continent, and experimental stations were erected in England during the war for the purpose of extracting by heat the bulk of the moisture, which, as is well known, is about 75 per cent. of the total weight, in order to preserve the potato for future use.

An important matter is the prevention of discoloration during the process. If proper care is used in designing the drying plant a good colour of product can be maintained without the use of any preserving agent, otherwise discoloration ensues, due to the action of enzymes. The potatoes to be preserved are first washed, then generally sliced or cut into chips, and dried in these forms. By this method the starch remains in an unchanged form, and the dried potatoes can be used later for any further industrial process in which unchanged starch is necessary; or the dried potatoes can be used for feeding purposes as and when required. The dried product contains all the solid materials of the potatoes *plus* only about one-twentieth of the original moisture. The result is that the finished article is about one-quarter of the original weight of potatoes received by the factory.

A process somewhat similar to the above is also in use in preparing dried pressed potatoes. The advantage of this system is that some of the water of the potato is got rid of by mechanical means instead of by heat only as in the foregoing method. In this process the potatoes are washed, then finely ground until they form a thin mash, after which they are pressed into cakes, and the extracted water, which consists of the juice of the potatoes, is utilised either for manurial purposes or for the concentration of its contents. The pressed cake is then dried by heat, and it is found that only one-third of the drying is necessary compared with that required in preparing the dried flakes and chips above mentioned. The dried, pressed potato, when properly balanced with concentrates, forms an excellent foodstuff.

Among other methods of drying potatoes which may be mentioned is that of shredding. In this process the potatoes are washed and peeled and then parboiled; the parboiled mash is then forced through perforated die-plates and the strings thus formed are spread upon trays and dried by heat.

A more elaborate process in the industrial utilisation of the potato is its conversion into "potato flour," as it is called in this country. In this process the potato is first cooked, then dried, then reduced to flour, when it takes the form of a creamy powder. The potatoes are first conveyed through a stoning machine, in which stones accidentally introduced from the field are taken out; the potatoes are then washed thoroughly and cooked by steam in an enclosed container; the potato-mash thus formed passes on to a flaking machine, which generally consists of a pair of hollow rollers about 4 ft. diameter heated internally by steam; the mash passes between these rollers and adheres to the surface of the same in a thin film, which in the course of a partial revolution of the rollers is thoroughly dried and scraped off automatically in the form of flakes. These flakes pass on to flake breakers, where they are reduced to flour. In this process the starch becomes dextrinised during the cooking, and the product cannot, therefore, be used in any process where unchanged starch is necessary, but there remains a large field for the commercial utilisation of this material. It is used in large quantities in proprietary foodstuffs, in breadmaking, in soup powders, in fermentation processes, and it has been supplied to our own and other War Departments as ready-cooked potatoes, which by the addition simply of the necessary quantity of hot water gives mashed potatoes.

In the manufacture of potato flour the skins may be either included or eliminated as desired; in the latter event the operation is done automatically in revolving vessels, with roughened inner surfaces, through which a stream of water passes to carry off the skin particles rubbed off. About four to five tons of potatoes are necessary to produce one ton of potato flour.

Perhaps the most extensive commercial use of potatoes, however, is for the manufacture of farina. This product is a very fine, white, glistening powder which consists mainly of starch in an unchanged form, and it is used in breadmaking and in various food preparations, such as custard powders, &c. It is also used very largely in the textile industries, mainly in connection with the cotton and jute manufactures, where it is necessary in the weaving, finishing, and weighting processes, as also in dyeing processes. It is also employed as the first stage in the manufacture of dextrines, which in their turn again are used in textile industries, in the manufacture of gum, and in the laundry industry. Besides other uses in this form too numerous to mention, it is an ingredient in the manufacture of propulsive explosives and the basis of various fermentation industries.

The processes involved consist again in this case of stoning and washing, which must be very thorough because of the great importance of securing high colour standard in the finished material. This is followed by milling machines, where the potatoes are reduced to such a fine state of mash by means of fine saws quickly revolving that the starch granules are freed from the cells which contain them. Following this operation is the first of the sifting processes which extract the cellular material, thus liberating the bulk of the starch that was in the potatoes in a free but unpurified state. The starch at this stage is of a very dirty colour; washing and purification processes then follow in which large volumes of clean water are used, by which the dirty starch is converted into spotless white material without any artificial bleaching agents. This material is then dried at low temperature to obviate the conversion of the starch to dextrine. It afterwards follows a process of manufacture similar to that used in flour mills, where it is ground, if necessary, and then finely dressed, and thus becomes the farina of commerce.

The residues of the above processes consist of the skins and internal cellular structures of the potatoes, which are dried in various ways to form cattle foods, or they are sometimes utilised in the wet state as the basis of fermentation processes.

The two dry products together—about equal quantities of each—represent all the dry materials contained in the potatoes, *plus* about one-fifteenth of the original moisture contained in the potatoes, the final result being that the finished dry products will weigh between one-fifth and one-quarter of the original weight of the potatoes received by the factory.

Another most important industrial product from potatoes, though one that has not yet been established in this country, is alcohol. As is well-known, alcohol can be made by fermentation from starch of one sort or another, and the potato forms an excellent raw material for such manufacture.

This has been made use of to a very large extent on the Continent, where alcohol is produced by small plants in the places where potatoes are grown, for the purposes of providing power and lighting. There are also a number of large distilleries where commercial alcohol is produced for various purposes.

As a rough guide to the amount of spirit that can be produced from potatoes, it may be reckoned that one ton of potatoes containing 16 to 17 per cent. of starch will produce twenty gallons of 95 per cent. alcohol. The present value of this alcohol for chemical uses, at 8*s*. per gallon, would be £8.

The costs of production of alcohol in a small factory working intermittently have been estimated to be about 2*s*. 6*d*. per gallon for all charges, and 1*s*. for distribution, which would leave £4 10*s*. to pay for the one ton of potatoes and to cover profit.

It is, however, very important to realise that this high price for alcohol will not be maintained if it is manufactured to compete with petrol for power purposes. Larger factories working continuously and more cheaply than the above example will be necessary. It is estimated that a larger plant could work for 1*s*. 3*d*. for all charges and 1*s*. for distribution, which would, with alcohol selling at to-day's petrol price of 4*s*. per gallon, leave £1 15*s*. to pay for one ton of potatoes and to cover profit.

In this manufacture as well as in some of the foregoing, it is the amount of starch in the potatoes that counts with the manufacturer, and nothing else, and his output of alcohol by weight would be between 40-45 per cent. of the weight of starch in the potatoes he uses.

The present uses of industrial alcohol in this country are in the production of pharmaceutical products, artificial silks, dyes, photographic films, varnishes, polishes, &c.

Opinion to-day seems to be unanimous that the way out of our present difficulties with regard to petrol supply will be by encouraging the manufacture of alcohol for use either pure, as a substitute, or mixed with benzol, ether and (or) petrol for power purposes. The possible competition that would have to be faced by a potato spirit manufacturer must of course be looked at. So far as England is concerned the only serious competition would be from the conversion of ethylene (contained in coke-oven gases) into alcohol, but if all the coke-ovens that we have were arranged for the manufacture of alcohol from ethylene the total product would only be a very small portion of our requirements of power spirit. Competition will no doubt eventually arise from power alcohol produced in the Colonies and India, but this will to a large extent be discounted by the cost and difficulty of transportation. It cannot be denied that the cost for raw material, in the form of potatoes, which the industry will bear is very low, but the advantage to a British agriculturist, or to a group of agriculturists running their own spirit factory in a neighbourhood where potatoes are grown, is that they will be able to utilise, firstly potatoes that are unfit for sale purposes; and, secondly, in a time of glut they would be able to convert surplus potatoes into alcohol, leaving only sufficient to meet market requirements for sale in the ordinary way.

Briefly, the ordinary process for making potato alcohol is that the potatoes are thoroughly washed, as in other processes, then steam cooked, afterwards saccharified with green malt to form the mash, then fermented with yeast and then distilled.

Further products of the potato which are largely manufactured in various parts of the Continent are glucose and dextrine. Glucose is used in the manufacture of jam, confectionery and preserves, also in the distilling, brewing, textile industries, and other manufactures. The "heavy syrup" in which many tinned and bottled fruits are put up is entirely glucose.

Dextrine is mainly used in the textile industries in dressing and finishing fabrics, and also exclusively in the stationery industry for envelope gumming, &c.

As a matter of fact, glucose and dextrine plants are mostly run in connection with potato starch factories, and such starch as is not required for sale, or is of inferior value, is sent on to the glucose or dextrine factory.

The product that can be obtained from potatoes is, roughly speaking, a weight of glucose or dextrine equal to the weight of the starch in the potatoes. In other words, one ton of glucose or dextrine could be obtained from eight to nine tons of potatoes.

Glucose is a sweet, clear liquid, produced by the action of steam and acid on starch.

Dextrine is a dry, sweet, gummy powder, varying in colour from white to yellow and is produced by the action of heat and hydrochloric (or other) acid upon prepared dry starch.

While there are several other industrial products, among which may be mentioned products competing with celluloid and bone articles, edible paper for pastry making, &c., their utilisation is so small as to be negligible.

III.

In choosing the potato for factory use the point of view of the manufacturer would have to be kept in mind. The quality of the potato and its appearance is of no value to the industrial user; what he is after is starch, and other things being equal he will choose a potato which gives him the greatest starch yield, or, judging from another point of view, he would choose a potato which has the greatest density and the least moisture. This is not always the best table variety, but there is a fairly wide range of varieties open to the farmer which would satisfy the manufacturer, and an interesting table was issued recently by the Irish Board of Agriculture, giving the result of tests upon starch content of a large number of varieties. The variations between different varieties are remarkable, ranging from 20·5 per cent. starch, in the case of Langworthy, down to 13·3 in Ninetyfold, and even lower in the case of some little-grown varieties.[1] Two favourite varieties with industrial users in Holland are President and Eigenheimer, while in Germany the favourite variety for the same purpose is Professor Maerker, and in France Richter's Imperator and L'Institut de Beauvais.

IV.

Considering the future for the industrial utilisation of the potato from the agricultural point of view, one is led to the conclusion that even with the present extent of the crop and the present utilisation of it mainly for the table, the provision of factories for the purpose of converting potatoes is a subject well worthy of investigation. In the event of a glut, the surplus need not be thrown upon the market for table consumption as is usually necessary, with the consequence that prices fall rapidly and the crop becomes unremunerative. Presuming that the surplus beyond table needs could be sent to the factory its withdrawal from the open market would have a steadying effect, and remunerative prices for such potatoes as were placed upon the open market would be maintained.

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[1] See Johnson & Boyle, *Industrial and Nutritive Value of the Potato in Ireland.* (*Journal of the Dept. of Agriculture, &c., for Ireland,* vol. xviii., No. 4, 1918.)

But apart from the question of surplus the existence of these factories would have the effect of providing always a market for diseased potatoes, for it is the curious fact that although a potato may be totally unfit for human consumption by reason of the disease its starch content is generally unaffected, and quite sound commercial products can be obtained from it. The factories would also provide a market for chats and heads which may not otherwise be utilisable.

This short article is intended mainly to be suggestive, by pointing out to the British agriculturist what alternative uses exist in connection with the potato crop. Probably the highest prices will always be secured, taking one year with another, for that portion of the crop which can be marketed directly as human food, but production varies considerably, both as to acreage and as to yield, and a sure outlet for the surplus in years of plenty would exert a stabilising effect upon the principal market. Moreover, a potato manufacturing industry could not be centralised; the cost of transporting a product containing so high a percentage of water would necessitate the erection of several factories throughout the potato-growing areas which would react most beneficially upon the whole rural organisation by the provision of winter employment for a considerable number of workers. The further advantages of establishing new industries for the provision of employment at home, and for the conservation of national wealth, are in the minds of every one at the present critical time, and need not be argued here.

A. E. Harris.

71 Finsbury Pavement,
London, E.C.2.

CONTEMPORARY AGRICULTURAL LAW.

I.—Legislation.

With the exception of the very important Agriculture Act 1920, which was passed into law at the very close of the Parliamentary Session of 1920, there has not been a large amount of legislation in the year affecting agricultural interests. There are however certain measures to which attention may usefully be drawn.

The previous legislation restricting the increase of rent and the right to possession of small houses was repealed and to some extent re-enacted and amended by the Increase of Rent and Mortgage Interest (Restrictions) Act 1920 (10 & 11 Geo. 5, c. 17). It is to this Act therefore that it will be necessary to have recourse when a question arises as to the right to require an increase of rent or delivery of possession of any such house. The Act applies to a house or part of the house let as a separate dwelling, where either the annual amount of the "standard rent" or the rateable value does not exceed (*a*) £105 in the metropolitan police district, including the city of London, (*b*) in Scotland, £90, (*c*) elsewhere £78, but it does not apply to a dwelling house bona fide let at a rent which includes payments in respect of board, attendance, or use of furniture. It is to continue in force until June 24, 1923. By section 2 certain increases of rent are permitted to cover expenditure on improvements, increase of rates, cost of repairs and also an additional amount not exceeding 15 per cent. of the net rent, but otherwise the rent cannot be raised. By section 5 the right to recover possession is restricted except in certain cases which include cases where rent is in arrear, or the tenant has been guilty of conduct which is a nuisance or annoyance to adjoining occupiers, or has allowed the premises to be used for immoral or illegal purposes, or the dwelling-house is reasonably required by the landlord for occupation as a residence for himself or for any person bona fide residing or to reside with him or for some person in his whole time employment or in the whole time employment of a tenant from him and (except as otherwise provided) the court is satisfied that "alternative accommodation, reasonably equivalent as regards rent and suitability in all respects" is available. But "alternative accommodation" need not be shown where the tenant was in the employment of the landlord or a former landlord and the dwelling-house was let to him in consequence of that employment and he has ceased to be in that employment, and when the court is satisfied by a certificate of the County Agricultural Committee (or of the Minister of Agriculture and Fisheries pending the formation of such committee) that the dwelling is required by the landlord for the occupation of a person engaged on work necessary for the proper working of an agricultural holding. So that where a farmer requires the possession of a cottage let with the farm for the use of a man in his employ, he should first apply for and obtain such a certificate.

The Act does not apply to any dwelling-house erected after, or in course of erection on, April 2, 1919, or to a house let with land other than the site of the house, unless the rateable value of the land let separately would be less than one quarter of the rateable value of the house.

The Finance Act 1920 (10 & 11 Geo. 5, c. 18), by Section 57 repeals the land values duties (*i.e.*, increment value duty, reversion duty and undeveloped land duty) imposed by the Finance (1909–10) Act 1910, and the obligations of the Commissioners of Inland Revenue under that Act to cause a valuation to be made of all land in the United Kingdom. Any person showing that he or any person of whom he is the legal representative has paid any sum on account of any land value may obtain repayment of the same. The only other part of this Act which it appears necessary to notice here is Section 13 which imposes certain duties on licences for mechanically propelled vehicles as mentioned in the second schedule to the Act. The second schedule prescribes the duties to be payable on vehicles used solely in the course of trade or agriculture which include a duty of 5*s*. only on "locomotive ploughing engines, tractors, agricultural tractors, and other agricultural engines, not being engines or tractors used for hauling on roads any objects except their own necessary gear, threshing appliances, farming implements, or supplies of fuel or water required for the purpose of the vehicle or for agricultural purposes" On "road locomotives and agricultural engines, other than such engines in respect of which a duty of 5*s*. is chargeable or which are used for haulage solely in connection with agriculture" the duty is £25 if not exceeding 8 tons in weight unladen, £28 if exceeding 8 tons but not exceeding 12 tons in weight unladen, and £30 if exceeding 12 tons. For tractors and agricultural engines, other than such tractors or engines in respect of which a duty of 5*s*. is chargeable, used for haulage solely in connection with agriculture the duty is £6 if not exceeding 5 tons in weight unladen, and £10 if exceeding 5 tons in weight unladen.

The Ecclesiastical Tithe Rent Charge (Rates) Act 1920 (10 & 11 Geo. 5, c. 22) relieves the owners of tithe rent charges attached to an ecclesiastical corporation or benefice of rates in excess of the amount which would have been payable if the rate had been made at the amount in the pound equal to the amount in the pound at which the corresponding rate was made in 1918.

Further, if the owner of such a tithe rent charge shows by statutory declaration that the total income arising from the benefice does not exceed £300 he is relieved altogether from the rate. If it exceeds that sum, but does not exceed £500, he will be allowed an abatement of one half. This Act though relieving the clergy from a subject of complaint has the unfortunate effect of increasing the burthen of other ratepayers where it applies, as no provision is made for meeting the loss to the rates which it necessarily causes.

The Ministry of Food (Continuance) Act 1920 (10 & 11 Geo. 5, c. 47) continues the office of Food Controller until September 1, 1922 for the purposes of the maintenance and augmentation of the food supply of the country and the regulation in the public interest of the treatment, distribution and prices of food. By Section 3 the Food Controller is given power to regulate the importation and exportation of food, and by Section 4, "with a view to assisting the industry of hop growing in the United Kingdom to recover from the injury which it suffered during the war," he may have and exercise any powers which at the time of the passing of the Act were exercisable by him and may by order prohibit or regulate the importation of foreign hops. By the Schedule to the Act his powers are subject to a limitation that he shall not without the consent in England and Wales of the Minister of Agriculture and Fisheries, in Scotland of the Board of Agriculture for Scotland, and in Ireland of the Department of Agriculture and Technical Instruction, make any order for the purpose of encouraging the cultivation of land in any manner, the keeping or breeding of any livestock or poultry, or the production of any farm or dairy produce.

The Seeds Act 1920 (10 & 11 Geo. 5, c. 54) which comes into operation on August 1, 1921, by Section 1 requires any person who sells any seeds to which the Act applies or any seed potatoes on or before sale or on or before delivery to deliver to the purchaser a statement in writing containing the "prescribed" particulars with respect, in the case of seeds, to their variety, purity, and germination and, in the case of seed potatoes, to their class, variety, size and dressing and in either case to any other "prescribed" matters. Every person who exposes for sale any seeds to which the Act applies or any seed potatoes must cause to be displayed conspicuously on or in close proximity to the seeds or potatoes a statement in writing containing the required particulars. But the Minister of Agriculture and Fisheries may by licence exempt any person as respects any sale or any exposure for sale of seed or seed potatoes from compliance with the foregoing requirements. Section 2 makes provision as to tests of seeds and Section 3 prohibits the sale or use of seeds containing injurious weed seed.

Section 4 empowers any person duly authorised by the Minister to enter on any premises where seeds or seed potatoes are sold or exposed and to take samples for testing. Under Section 5 the Act will not apply (*a*) to a sale of seeds to a person with a view to cleaning them before sale, (*b*) to a sale of seeds where the purchaser at the time of sale gives the seller an undertaking in writing that he will, before selling, test or cause them to be tested, or that he will not resell the seeds to a seed merchant except on a similar undertaking by the purchaser, (*c*) to a sale for delivery outside the United Kingdom, or (*d*) to a sale or exposure for sale of seeds or seed potatoes not to be used for sowing or planting. Section 7 empowers the Minister after consultation with representatives of the interests concerned (and as respects forest tree seeds after consultation also with the Forestry Commissioners) to make regulations for carrying the Act into effect and in particular for prescribing (*a*) the seeds whether agricultural, vegetable or forest tree, to which the Act is to apply; (*b*) the manner in which samples are to be taken and dealt with, and (*c*) any matter which under the Act is to be "prescribed." Any regulation made under the Act must be laid before each House of Parliament, and either House has power to annul the same within thirty days. The Act provides for penalties and the institution of legal proceedings and by Section 13 for the establishment of official seed testing stations.

Undoubtedly the most important Act of the Session from the agricultural point of view is the Agriculture Act 1920 (10 & 11 Geo. 5, c. 76) which was considerably altered in its passage through the House of Lords and was not passed into law until the last day of the Session. To set out fully the effect of the Act it would be necessary to examine it in greater detail and at greater length than is possible here, and it is therefore only proposed to summarise its principal provisions. It is divided into three parts. Part I is an amendment of the Corn Production Act 1917, Part II is an amendment of the Agricultural Holdings Act, and Part III contains some general provisions. To deal first with Part I, it provides that the Corn Production Act 1917 (*see* summary of this Act in Article on Contemporary Agriculture Law in Vol. 78 of the Journal of R.A.S.E.) which was only passed to continue until the end of the year 1922 shall continue in force until Parliament otherwise determines with power to His Majesty by Order in Council on an Address presented to him by both Houses of Parliament to declare that it shall cease to be in force on the expiration of the fourth year subsequent to the Order in Council. Section 2 amends the provisions of the Act of 1917 as to minimum and average prices of wheat and oats and lays down that the minimum prices for wheat and oats for the year 1921 and any subsequent years shall be such prices for a statutory quarter as "correspond" to the minimum prices for wheat and oats for the year 1919 ("the standard year") viz., Wheat, 68*s*. per customary quarter of 504 lb.; Oats, 46*s*. per customary quarter of 336 lb. The "correspondence" of any year will depend upon the cost of production of the wheat and oats respectively in that year as compared with such cost of production in the standard year and the minimum prices will vary proportionately. The costs of production for the purpose of thus fixing the minimum prices are to be ascertained by Commissioners and the minimum prices are to be certified by them. Farmers will thus be guaranteed minimum prices for wheat and oats varying according to the cost of production in 1921 and each following year while the Act is in force reckoned on the footing of a presumed crop of 4 quarters to the acre on land sown with wheat and 5 quarters to the acre on land sown with oats in accordance with the provisions of Section 1 of the Corn Production Act 1917. The expression "statutory quarter" is to be substituted for the expression "quarter" in the Act of 1917, which is therein defined as meaning 480 lb. for wheat and 312 lb. for oats. Section 4 supersedes the powers of enforcing proper cultivation hitherto exercised by the Ministry of Agriculture and Fisheries and County Agricultural Executive Committees under the Defence of the Realm Regulations and substitutes for those powers less drastic powers of enforcing cultivation according to the "rules of good husbandry" and of compelling the improvement of existing methods of cultivation with a view to maintaining and increasing the production of food, but without giving power to enforce the ploughing of grass land. There are also powers given of enforcing the execution of "necessary works of maintenance" against occupiers and owners of land and a new power of depriving an owner of the management of his land, whether or not in the occupation of tenants, who so "grossly mismanages the estate" as to prejudice materially the production of food thereon or the welfare of those engaged in its cultivation, and putting the management into the hands of a receiver and manager. "Necessary works of maintenance" include the maintenance and clearing of drains, embankments and ditches, the maintenance and repair of fences, stone walls, gates and hedges and the execution of repairs to buildings. The foregoing powers are made exercisable by the Minister of Agriculture and Fisheries after consultation with the County Agricultural Committees established under the Ministry of Agriculture and Fisheries Act 1919, and a right of appeal to arbitration is given to persons aggrieved by notices served under this section with regard to cultivation or the execution of necessary works of maintenance. Failure to comply with such notices will render the person in default liable to a fine. The same section also gives power to compel occupiers to cut down or destroy injurious weeds on their land

Part II of the Act is an amendment of the Agricultural Holdings Acts. Section 10 provides for the payment of compensation for disturbance to tenants quitting their holdings by reason of notices to quit given by the landlords after May 20, 1920. This right to compensation for disturbance is substituted for that given by Section 11 of the Agricultural Holdings Act 1908, and is much more comprehensive than the latter, for under the Act of 1920 with certain exceptions to be hereafter noticed compensation is given in all cases where the notice to quit comes from the landlord and not only in cases where the notice is given "without good and reasonable cause, and for reasons inconsistent with good estate management" as under the Act of 1908. The principal exceptions are when the tenant is not cultivating the holding according to the rules of good husbandry, where he has failed to pay his rent within a reasonable time or to remedy a breach of any term or condition of the tenancy consistent with good husbandry, where he has committed a breach of such a term or condition which is not capable of being remedied, where he has become bankrupt, and where he has refused or failed to agree to a demand in writing by the landlord for arbitration as to the rent of the holding. No compensation for disturbance will be payable unless the tenant has not less than one month before the termination of the tenancy given a written notice of his intention to claim or where the tenant has died within three months before the notice to quit. The amount of the compensation will be a sum representing the tenant's loss or expense incurred in connection with the sale or removal of his household goods, implements of husbandry, fixtures, farm produce and farm stock including expenses reasonably incurred in the preparation of his claims for compensation. But this sum is not left at large as under the Act of 1908. To avoid disputes it is to be computed at an amount equal to one year's rent of the holding unless it is proved that the loss and expense exceed such amount, in which case the sum recoverable will be the whole loss and expenses up to a maximum amount equal to two years' rent of the holding. For the purposes of this section a landlord may apply to the County Agricultural Committee for a certificate that the tenant is not cultivating the land according to the rules of good husbandry, and a certificate so granted will be treated as conclusive evidence on the point.

In one case compensation for disturbance will be payable when the notice to quit comes from the tenant and not from the landlord, that is where the landlord refuses or fails to agree to a demand in writing from the tenant for arbitration as to the rent to be paid for the holding and by reason of such refusal or failure the tenant exercises his power of terminating the tenancy. The Act therefore in effect provides that except where the landlord and tenant agree as to an increase or reduction of rent, any question of such increase or reduction must be submitted to arbitration, for a refusal to submit will render a refusing tenant liable to lose his compensation for disturbance if the landlord in consequence serves a notice to quit, and will render a refusing landlord liable to pay such compensation if the tenant in consequence serves notice to quit. But these provisions of the Act do not apply where the demand for an increase or reduction of rent would take effect upon the expiration of two years from the commencement of the tenancy, or from the date of a previous increase or reduction of rent. In such cases a recourse to arbitration cannot be required.

The right of compensation for disturbance is by Section 11 extended to tenants of allotment gardens, and by Section 12 to workmen employed in agriculture and given the occupation of farm cottages whose occupation is terminated on account of the termination by the tenant of the holding of the employment, with certain exceptions, which include cases where the notice to terminate the occupation is given before the expiration of six weeks from its commencement and where it is given by reason of the workman's misconduct.

The law as to improvements for which compensation can be obtained is amended by Section 16, which gives a right to compensation for an increase in the value of the holding due to the adoption by the tenant of a special or high standard or system of farming above the standard or system (if any) required by the contract of tenancy, and by Section 15, which provides that where a landlord refuses to consent to the making of any improvement comprised in Part I of the First Schedule to the Act of 1908 (other than the erection, alteration or enlargement of buildings or an improvement in the Third Schedule) so as to give the tenant the right to compensation, and the improvement is one declared by regulation of the Minister of Agriculture and Fisheries to be within the purview of this section, then the tenant may apply to his County Agricultural Committee for a direction that the improvement is to be treated as if it were comprised in Part II of the First Schedule, so as to give him a right to execute it in default of the landlord doing so and to obtain compensation for its value on the termination of the tenancy.

The same section deals also with the market garden improvements mentioned in the Third Schedule of the Act of 1908, and provides that if a landlord refuses or fails to agree that the holding shall be treated as a market garden so as to give the tenant on quitting the right to compensation for market garden improvements, such as the planting of fruit trees, fruit bushes, strawberries, rhubarb, &c., the County Agricultural Committee may, if satisfied that the holding is suitable for market gardening, direct that Section 42 of the Act of 1908 shall apply with the result of enabling the tenant to obtain compensation for such improvements. There is a saving clause added which applies what is known as the "Evesham custom," where any such direction is given and the tenancy is terminated by notice to quit given by the tenant, or by reason of his bankruptcy; that is to say, the landlord will not be liable to pay compensation in such cases if he allows the outgoing tenant to find a substantial and suitable person to take over the tenancy and to pay to the outgoing tenant all compensation payable to him.

The law as to notices to quit is amended by Section 28, which provides that a notice to quit a holding will be invalid if it purports to terminate the tenancy before the expiration of twelve months from the end of the then current year of the tenancy. so that a twelve months' notice to quit will henceforth be necessary in all cases, with certain small exceptions, which include a notice in pursuance of a provision in the contract of tenancy authorising resumption for some specified purpose other than agriculture, any notice given by a tenant to a sub-tenant, and any notice given before the commencement of the Act. Furthermore, even in the case of a tenancy for a fixed term of two years or upwards, at least a year's notice to quit will be necessary, for it is provided by Section 13 that any such tenancy shall not terminate on the expiration of the term except upon such notice given by either party, and if no such notice is given the tenancy will from the expiration of the term for which it was granted continue as a tenancy from year to year; but the section is not to apply to any tenancy granted or agreed to be granted before the commencement of the Act.

The Act also deals with arbitrations, and provides by Section 18 in effect that all claims by tenant against landlord or by landlord against tenant, and all questions as to the construction of the contract of tenancy, shall be determined by arbitration, and the right of recourse to the Court instead of to arbitration is apparently excluded. Provisions are also made for expediting and reducing the costs of arbitrations and for the constitution of a panel of arbitrators from whom any arbitrator nominated otherwise than by agreement must be selected.

Under Section 19 the landlord is given a right to compensation for deterioration of the holding caused by the tenant's failure to cultivate according to the rules of good husbandry or the terms of the contract of tenancy, and by Section 25 the removal of any manure or compost or any hay or straw or roots grown in the last year of the tenancy is forbidden until the landlord or incoming tenant has been given a reasonable opportunity of purchasing the same.

The "rules of good husbandry" are frequently referred to in the Act, and a definition of them is given in Section 33, which includes under that expression the maintenance of the land clean and in a good state of cultivation and fertility, the maintenance and clearing of drains and ditches, the maintenance and repair of fences, stone walls, gates and hedges, the execution of repairs to the necessary buildings, and such rules of good husbandry as are generally recognised as applying to holdings of the same character and in the same neighbourhood.

II.—Decisions of the Courts.

1. *Labour*. There are two cases which arose under the Workmen's Compensation Act 1906 which should be noticed. The first is *Manton* v. *Cantwell* (89 L.J.P.C., 73; [1920] A.C., 781), which was an appeal from the Irish Court to the House of Lords. The question was whether a casual labourer employed to thatch a farmhouse in which the farmer resided was employed "for the purposes of the employer's trade or business," so as to render the employer liable for an accident which occurred to the labourer while so employed notwithstanding Section 13 of the Act which excludes liability in the case of a casual labourer not so employed. It was held that there was evidence which justified the County Court Judge in finding that the employment was for the purposes of the employer's trade or business so as to render him liable to pay compensation in respect of the workman's death. The House of Lords thus reversed the decision of the Irish Court of Appeal, which is noted in Vol. 79 of the R.A.S.E. Journal at p. 130. The second case under the same Act is *Bird* v. *Price* ([1920] W.C. & Ins. Rep., 142), where a woman employed as a farm labourer was told by her employer to go to work at a certain place and that she would be met at one point by his foreman, who would pick her and other women up and drive them to the place of work. She was met by the foreman with a van in which she had ridden before, and was told by him to get into it. She and other women, however, preferred to get into a farm cart, also belonging to the employer and driven by one of his men. The foreman told them they were silly fools to get into the cart, but he did not insist on their going in the van. The cart was upset on the way to work and the applicant was injured. It was held that the accident arose "out of and in the course" of the employment, and that the employer was therefore liable for the injury.

Bickerdike v. *Lucy* (89 L.J.K.B., 558) was a case under the provisions of the Corn Production Act 1917, relating to minimum wages. A person was employed in gardens attached to and which supplied the house with produce. When the family were not in residence such produce as they required was sent to them weekly and the surplus was sold. It was held that he was not entitled to be paid the minimum rate of wages fixed by the Act unless the gardens were a "market garden," and that the fact that part of the produce was sold did not make them a market garden within the Act.

The case of *Hampton* v. *Smith* (89 L.J.K.B., 413) decided that it is not necessary under the Act to pay the minimum wages week by week. Hence where the employer hired a labourer for twelve months at a certain sum per annum with board and lodging which gave a weekly average wage less than the minimum weekly rate fixed under the Act, and an information was filed before the expiration of the year's hiring charging him with not paying wages to the labourer at a rate not less than the minimum wage, it was held that no offence had been committed as it could not be ascertained before the end of the year's service whether or not the minimum rate had been paid.

In *Gladstone* v. *Burton* (89 L.J.K.B., 302; [1920] 1 K.B., 608) it was held that the Regulations of 1918 made under the National Insurance Act 1911, Part I, Section 7, impose on employers the obligation to affix stamps to the contributors' cards before paying wages for the period in respect of which the contributions are payable, and that the obligation is not complied with by affixing within six days after the expiration of the period of currency of the card stamps in respect of all the weekly contributions payable during such period. Therefore magistrates should have convicted a farmer who failed to stamp the card of his workman weekly on or before payment of the wages.

2. *Stock.* In *McLaughlin* v. *Bailey* ([1920] 2 Ir.R., 310) the owner and occupier of a farm used it principally for the breeding of racehorses and hunters for sale. She kept upon the land a number of mares and two stallions. In addition to serving the farmer's own mares one of the stallions was used for the service of mares belonging to other owners, and for the service of those mares fees were received. It was held that the stallion fees so received from outsiders were liable to assessment under Schedule D of the Income Tax Acts, and were not included in the assessment under Schedule B in respect of the occupation of lands, tenements and hereditaments.

In *Palmer* v. *Powell* (89 L.J.K.B., 1119) it was held that the Slaughter-houses (Licensing] Order 1918, made under the Defence of the Realm Regulations, does not apply only to slaughter-houses for the slaughter of cattle intended for human food, and consequently a person who keeps premises for the slaughter of any cattle, whether intended for human food or not, commits an offence unless he has obtained a licence under the provisions of the order.

3. *Landlord and Tenant.* There have during the past year been an unusual number of cases dealing with questions arising out of the relationship of landlord and tenant.

Bradshaw v. *Bird* ([1920] 3 K B., 144) was a case under the Agricultural Holdings Act 1914, which gave a tenant compensation for disturbance if the tenancy of the holding was terminated by notice to quit in view of the sale of the holding, but which has now been repealed by the Agriculture Act 1920, which as mentioned above considerably extends the tenant's right to claim compensation for disturbance. Certain landlords gave notice in 1917 to their tenants to quit at Michaelmas, 1918, with a view to the sale of the farm. In October, 1917, they agreed to sell the farm to a purchaser. On July 18, 1918, the sale of the farm was completed. The question arose whether the original landlord or the purchaser who had become the landlord before the expiration of the tenancy was liable to pay compensation for disturbance under the Act of 1914 to the tenant. It was held that the purchaser, as being at the time when the tenancy came to an end entitled to receive the rents and profits of the land, was the person liable. It is to be noted that the question would not have arisen had the sale taken place after the passing of the Agricultural Land Sales (Restriction of Notices to Quit) Act 1919 (see R.A.S.E. Journal, vol. 80, p. 154), as in that case the sale would have avoided the then current and unexpired notice to quit.

Cowdray v. *Ferries* ([1919] S.C. 27) was a Scottish case dealing with the right to compensation for disturbance, where it was laid down by the House of Lords that it is for the arbitrator to determine all questions arising under the section that gives this right, including those connected with the time and validity of notices to quit and the time and validity of notices to claim compensation.

In *Thomson* v. *Galloway* (*Earl*) ([1919] S.C., 611), another Scottish case, it was held that the section giving the tenant a right to compensation for damage by winged game (Sect. 10, sub-s. 1 of the Agricultural Holdings Act 1908) extends to compensation for damage by winged game coming not from the landlord's own land but from that of a neighbouring proprietor, and even during the legal close season.

Two cases under the above-mentioned Agricultural Land Sales (Restriction of Notices to Quit) Act 1919 should be noticed. In *Robinson* v. *Nesbitt* (64 Sol. J., 291) Russell, J., held that the Act has the result of rendering null and void notices to quit in the event of sales (1) when the sale is a sub-sale of an interest purchased under a previous contract; (2) where the sale is by an equitable as well as where it is by a legal owner; (3) where the notice is given by one person and the sale by another; (4) where the sale is only a part of the holding. The effect of this case is, however, to some extent avoided by the Agriculture Act 1920, which amends the Act of 1919 by enacting that it shall only apply where the sale is made by the person by whom the notice to quit was given. The other case of *Brooks* v. *Bloor* (64 Sol. J., 685; 36 Times L.R., 826) was a case of a sale of Church lands where the consents of the patron of the living and the Archbishop, Bishop and Queen Anne's Bounty were necessary for the validity of the sale to be testified by their execution of the conveyance to the purchaser. The contract of sale was entered into before the passing of the Restriction of Notices to Quit Act, but the consents of the persons whose consent was required was given by their joining in the conveyance to the purchaser after the passing of the Act and during the pendency of a notice to quit the land which had been given to the tenant. It was held that the notice to quit was not avoided as the contract of sale was entered into before the Act, and it made no difference that the necessary consents were not given till afterwards.

In *Premier Dairies Lim.* v. *Garlick* (89 L.J.Ch., 332; [1920] 2 Ch. 17) it was held that it is open to the parties to an agricultural lease to contract themselves out of the operation of Section 21 of the Agricultural Holdings Act 1908, which gives the tenant the right to remove buildings and fixtures erected by him, and that when the tenant covenants to leave, surrender and yield up to the lessor at the end of the term "all new and other buildings and erections," he will not be entitled to remove buildings and fixtures erected by him during the tenancy.

In *Re Harvey & Mann's Arbitration* (89 L.J.K.B., 687) the Court of Appeal held affirming the decision of the Norfolk County Court Judge that a tenant who omits to give to the landlord under the provisions of Section 21 notice of his intention to remove a fixture, whereby the landlord is prevented from exercising the option given to him by the Act to purchase the same, cannot afterwards obtain compensation for expenses or loss suffered through the removal of that fixture as part of his claim for compensation for disturbance.

Clarke-Jervoise v. *Scutt* (89 L.J.Ch., 218; [1920] 1 Ch., 382) was a case where the tenant had covenanted in 1894 not to plough up "any grass land" and to cultivate the land in a husbandlike manner. In 1896 he laid down to grass some of the land scheduled as arable in his tenancy agreement, and it continued in grass from that time. In 1919 he threatened to plough up the land so laid down. It was held that as the covenant not to plough up extended to "any grass land," it was not restricted to grass land at the date of the letting and to plough up the land in question would be a breach of the covenant. It would also be a breach of the covenant to cultivate in a husband-like manner. This case is to be distinguished from *Rush* v. *Lucas* (79 L.J.Ch., 172; [1910] 1 Ch., 437) where the covenant was not so wide, being not to plough or break up "any of the pasture land," which was held only to extend to land in that condition at the commencement of the tenancy.

Richards v. *Davies* (89 L.J.Ch., 601) establishes that the tenant of a farm who by his tenancy agreement covenants not to underlet or permit any other person to occupy any part of the buildings, lands or premises without the consent of the landlord, commits a breach of that covenant by a sale or letting of grass keep on the farm without the landlord's consent.

Hill v. *Kirshenstein* (89 L.J.K.B., 1128; [1920] 3 K.B., 556) shows that a tenant who has paid his landlord's property tax must exercise his right of deduction from the next payment of rent. If he omits to do so he cannot legally deduct or claim it from the landlord subsequently.

In *Allison* v. *Scargill* (89 L.J.K.B., 1084; [1920] 3 K.B., 443) the tenancy agreement provided that the defendant should become tenant of the farm "from the 6th day of April next . . . until the 6th day of April, 1916, or such later date being the 6th day of April immediately following the sale of the farm." The farm was sold in October, 1919, and the plaintiffs claimed that by reason of the sale the tenancy determined on April 6, 1920. The defendant contended that he was entitled to the usual notice to quit. It was held that there was nothing in the clause repugnant to the nature of a tenancy from year to year, and that the tenancy had determined on April 6, 1920.

4. *Produce.* In *Kenny* v. *Cox* (89 L.J.K.B., 1258) the respondent was charged with selling milk not of the nature, substance and quality demanded. The public analyst stated that a quantity of extraneous matter was present in very microscopical quantities, consisting of dirty *débris*, being waste organic matter in a more or less advanced state of decomposition mixed with particles of dung, cotton and wool fibres, but the sample was otherwise good milk. The Justices, without calling on the defence, dismissed the charge, and on appeal their decision was confirmed and it was held that the charge had been rightly dismissed, for it was an attempt to set up an impossible standard and no *prima facie* case had been established against the respondent.

In *Kings* v. *Merris* ([1920] 3 K.B., 566) the milk seller was not so fortunate. On analysis the milk was found to be deficient in non-fatty solids to the extent of 6·4 per cent. The respondent gave no evidence that the milk was in the same condition when sold as it was when it came from the cows, but called a pharmaceutical chemist, who stated that milk varies considerably without being tampered with, that there were many causes creating variability in milk, that the district was a manufacturing one and the pasture affected by chemicals so that it would not produce high-class milk, and that accepting the analyst's certificate there was nothing to show that the milk was not genuine. The Justices dismissed the case, but wrongly as the Divisional Court decided. That Court held that where there is evidence of deficiency in the percentage required by the Sale of Milk Regulations, 1901, the presumption that the milk is not genuine arises, and unless rebutted there must be a conviction. To rebut the presumption the respondent must prove that the milk sold was in the same condition as when it came from the cows, that is that nothing had been added to or abstracted from it. The chemist's evidence did not rebut the presumption that this milk was not genuine. They therefore remitted the case to the Justices for a further hearing.

5. *Miscellaneous. Harvey* v. *Herefordshire County Council* (89 L.J.K.B., 601; (1920] 2 K B., 395) was a case under the Fertilisers and Feeding Stuffs Act, 1906, which by Section 1 sub-section 1 requires the seller of any article as a fertiliser of the soil which has been subjected to any artificial process in the United Kingdom, or which has been imported from abroad, to give an invoice showing the respective percentages (if any) of nitrogen, soluble phosphates, insoluble phosphates and potash contained in the article. The same Act by Section 6 sub-section 1 makes it an offence not to give the invoice required by the Act or to permit any invoice or description of the article sold to be false in any material particular to the prejudice of the purchaser. The appellants were charged and convicted by Justices under this Act for selling shoddy for use as a fertiliser with an invoice which was false in stating that the shoddy contained 6 per cent. of ammonia. Section 1 sub-section 1 of the Act, requiring percentages of constituents to be given in the invoice, did not apply to this article as it had not been subjected to any artificial process. It was held, that the sellers were rightly convicted under Section 6 sub-section 1 of the Act for giving an invoice which was false in a material particular, although the shoddy sold was not an article in respect of which an invoice was required to be given by Section 1 sub-section 1.

There have been two cases reported under the Small Holdings and Allotments Act 1908, and Land Settlement (Facilities) Act 1919. In *Rex* v. *Bedfordshire County Council* (89 L.J.K.B., 425; [1920] 2 K.B., 465) it was held that an order for the compulsory taking of land for small holdings may be made by a county council under section 1 sub-section 1 of the Act of 1919 without any previous inquiry by or consent of the Ministry of Agriculture and Fisheries. It is apparent therefore that county councils have uncontrolled powers of making such compulsory orders, but the consent of the Ministry is necessary under Section 10 sub-section 1 of the Act before the next step is taken, viz. the giving of notice to treat in respect of the land comprised in the order. In *Gaskell* v. *Somersetshire County Council* (18 L.G.R., 245) the County Council were in communication with the plaintiff with a view of acquiring certain lands of his for the purpose of small holdings, and were informed that they would have the opportunity of purchasing at a sale by auction which he proposed to hold shortly. As soon as the plaintiff issued his announcement and particulars of sale the Council made an order for the compulsory acquisition of the land. The plaintiff moved for an injunction to restrain the Council from interfering with his auction sale by serving notice to treat under their compulsory order and from asserting that the order was valid, and contended that the Council had no power to make a compulsory order in this case as they had not shown that they could not acquire the land by agreement and on reasonable terms. Russell, J., granted an interlocutory injunction, and the Council appealed. The Court of Appeal on the balance of convenience dissolved the injunction, leaving the question as to the validity of the compulsory order open to be tried later on, but the case was never tried out.

In *Collis* v. *Amphlett* (89 L.J.Ch., 101; [1920] A.C., 271) the boundary of a certain common from the adjacent land came in question. In a map attached to an award made under a local Act for the regulation of the common the boundaries of the common were delineated by a line drawn along the line of the "growers" in the hedge dividing the common from the land of an adjacent owner and belonging to such owner. The owner claimed a "ditch width" on the outside of the line of growers, although there was in fact no ditch, on the analogy to the rule, where there is an actual ditch and a fence, that the ditch belongs to the owner of the land on which the fence stands. It was held that there was no presumption that the owner was entitled to "ditch width" on the outside of the line of growers in the absence of evidence that the hedge was originally planted inside the boundary line, and that any fence erected outside the line of growers by the landowner would be an encroachment on the common.

AUBREY J. SPENCER.

15 Old Square,
Lincoln's Inn, W.C.

TABLE I.—Total Produce, Acreage, and Yield per Acre *of* 1920 *and* 1919, *with the Average*

Crops	Total Produce		Acreage		Yield per Acre		Average of the Ten Years 1910–1919
	1920	**1919**	**1920**	**1919**	**1920**	**1919**	
WHEAT.	Qrs.	Qrs.	Acres.	Acres	Bush.	Bush.	Bush.
England . . .	6,515,000	7,728,000	[4]1,824,037	2,150,281	28·6	28·8	30·7
Wales . . .	154,000	248,000	50,548	70,914	24·8	28·0	27·8
Scotland . . .	260,000	383,000	54,359	79,509	38 2	38·5	39·5
GREAT BRITAIN .	6,929,000	8,359,000	1,928,944	2,300,704	28·7	29·1	30·9
Ireland . . .	175,000	306,000	50,252	69,663	27·9	35·1	36·6
UNITED KINGDOM	7,104,000	8,665,000	1,979,196	2,370,367	28·7	29·2	31·1
BARLEY.[2]							
England . . .	5,982,000	5,074,000	1,537,735	1,405,643	31·1	28·9	31·2
Wales . . .	353,000	400,000	99,225	104,073	28·5	30·7	30·5
Scotland . . .	973,000	764,000	204,369	173,746	38·1	35·2	35·1
GREAT BRITAIN .	7,308,000	6,238,000	[5]1,841,329	1,683,462	31·8	29·6	31·6
Ireland . . .	903,000	975.000	206,888	186,625	34·9	41·8	42·4
UNITED KINGDOM	8,211,000	7,213,000	2,048,217	1,870,087	32·1	30·9	32·7
OATS.							
England . . .	9,846,000	10,052,000	2,016,531	2,251,558	39·1	35·7	39·2
Wales . . .	900,000	1,365,000	249,093	312,175	28·9	35 0	35·1
Scotland . . .	5,157,000	5,305,000	1,032,198	1,110,811	40·0	38·2	39·0
GREAT BRITAIN .	15,903,000	16,722,000	[6]3,297,822	[6]3,674,544	38·6	36·4	38·8
Ireland . . .	6,706,000	8,773,000	1,332,050	1,442,458	40·3	48·7	50·7
UNITED KINGDOM	22,609,000	25,495,000	4,629,872	5,117,002	39·1	39 9	42·1
BEANS.							
England . . .	950,000	847,000	244,456	271,481	31·1	25 0	27·3
Wales . . .	6,900	7,800	1,858	2,460	29·5	25·5	27·3
Scotland . . .	26,900	32,800	5,726	6,654	37·6	39·4	37·0
GREAT BRITAIN .	983,800	887,600	[7] 252,040	[7] 280,595	31·2	25·3	27·5
Ireland . . .	[8]	[8]	[8]	[8]	[8]	[8]	42·7[10]
UNITED KINGDOM	[8]	[8]	[8]	[8]	[8]	[8]	28·0[10]
PEAS.							
England . . .	442,000	440,000	128,744	131,718	27·5	26·7	24·9
Wales . . .	1,500	1,400	567	531	22·2	21·7	22·4
Scotland . . .	270	230	85	103	25·7	18·0	24·6
GREAT BRITAIN .	443,770	441,630	[7]129,396	[7]132,352	27·4	26·7	24·9
Ireland . . .	[8]	[8]	[8]	[8]	[8]	[8]	29·7[10]
UNITED KINGDOM	[8]	[8]	[8]	[8]	[8]	[8]	24·7[10]

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[1] The particulars for Ireland have been furnished by the Department of Agriculture and Technical Instruction for Ireland, and those for Scotland by the Board of Agriculture for Scotland. No Produce Statistics are collected for the Channel Islands and the Isle of Man.

[2] Including Bere. [3] No hops are grown in any other part of the United Kingdom.

[4] Exclusive of a certain area (amounting in 1920 to 67 acres) the produce of which was cut green.

[5] Exclusive of a certain area (amounting in 1920 to 262 acres) the produce of which was cut green.

each of the Principal Crops *in the* United Kingdom [1] *in of the Ten Years* 1910–1919.

Crops—*continued*	Total Produce		Acreage		Yield per Acre		Average of the Ten Years 1910–1919
	1920	1919	1920	1919	1920	1919	
POTATOES.	Tons	Tons	Acres	Acres	Tons	Tons	Tons
England . . .	3,053,000	2,571,000	516,933	446,341	5·9	5·8	6·2
Wales . . .	98,000	162,000	27,682	29,035	3·5	5·6	5·6
Scotland . . .	1,237,000	832,000	162,477	154,596	7·6	5·4	6·4
GREAT BRITAIN .	4,388,000	3,565,000	707,092	629,972	6·2	5·7	6·2
Ireland . . .	1,986,000	2,747,000	584.316	588,802	3·4	4·7	5·4
UNITED KINGDOM	6,374,000	6,312,000	1,291,408	1,218,774	4·9	5·2	5·8
TURNIPS AND SWEDES.							
England . . .	13,484,000	10,399,000	[8]932,829	[8]923,619	14 5	11 3	12·4
Wales . . .	709,000	760,000	55,622	57,819	12 8	13 1	14·9
Scotland . . .	7,692,000	7,146,000	425,255	426,451	18 1	16 8	16·3
GREAT BRITAIN .	21,885,000	18,305,000	1,413,706	1,407,889	15·5	13·0	13·7
Ireland . . .	4.107,000	4,487,000	276,507	273,460	14·9	16 4	17·1
UNITED KINGDOM	25,992,000	22,792,000	1,690,213	1,681,349	15·4	13·6	14·2
MANGOLD.							
England . . .	7,166,000	6,098,000	[8]373,699	[8]381,344	19·2	16 0	19·0
Wales . . .	141,000	196,000	10,579	13,069	13·3	15·0	17·6
Scotland . . .	29,000	43,000	1,768	2,507	16·4	17·0	19 6
GREAT BRITAIN .	7,336,000	6,337,000	386,046	396,920	19·0	16·0	18·9
Ireland . . .	1,246,000	1,432,000	77,447	74,839	16·1	19·1	19·9
UNITED KINGDOM	8,582,000	7,769,000	463,493	471,759	18·5	16·5	19·1
HAY *from* CLOVER, SAINFOIN, &C.					Cwt.	Cwt.	Cwt.
England . . .	2,327,000	1,600,000	1,486,149	1,342,131	31·3	23·8	28·8
Wales . . .	257,000	169,000	188,293	159,122	27·3	21·3	25·3
Scotland . . .	694,000	521,000	425,256	394,246	32·6	26·4	30·8
GREAT BRITAIN .	3,278,000	2,290,000	2,099,608	1,895,499	31·2	24·2	28·9
Ireland . . .	[9]	[9]	[9]	[9]	[9]	[9]	36·9[10]
UNITED KINGDOM	[9]	[9]	[9]	[9]	[9]	[9]	31·8[10]
HAY *from* PERMANENT GRASS.							
England . . .	5,071,000	3,028,000	3,002,520	3,694,597	26·0	16 4	21·9
Wales . . .	556,000	389,000	492,428	475,912	22·6	16·4	19·6
Scotland . . .	248,000	191,000	152,164	147,679	32·6	25 8	29·7
GREAT BRITAIN .	5,875,000	3,608,000	4,547,112	4,318,188	25·8	16·7	22·0
Ireland . . .	[9]	[9]	[9]	[9]	[9]	[9]	2·1[10]
UNITED KINGDOM	[9]	[9]	[9]	[9]	[9]	[9]	27·2[10]
HOPS.	Cwt.	Cwt.					
England [3]. . .	281,000	189,000	21,002	16,745	13·4	11·3	10·1

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[6] Exclusive of a certain area (amounting in 1920 to 6,079 acres) the produce of which was cut green.

[7] Exclusive of a certain area (amounting in 1920 to 10,828 acres of beans and 36,652 acres of peas) the produce of which was cut or picked green.

[8] Exclusive of a certain area (amounting in 1920 to 2,957 acres of turnips and swedes, and 1,588 acres of mangolds) on which the crops were grown for the production of seed.

[9] Figures for Ireland not available. The total acreage of hay (from clover, &c., and permanent grass) in Ireland in 1920 was 2,518,320 acres, and the total production 5,547,000 tons.

[10] Average of 9 years only.

TABLE II.—Acreage under Crops and Grass; *and* Number *of* Live Stock, *as returned on June* 4, 1920 *and* 1919.

	England		Wales	
	1920	**1919**	**1920**	**1919**
	Acres		Acres	
Total Area (excluding water)	32,385,350		4,751,276	
Total Acreage under Crops and Grass [1]	23,847,426	24,069,298	2,659,585	2,678,655
Arable Land	11,180,322	11,412,353	839,423	896,523
Permanent Grass	12,667,104	12,656,945	1,820,162	1,782,132
Wheat	1,824,104	2,150,281	50,548	70,914
Barley or Bere	1,537,967	1,405,643	99,255	104,073
Oats	2,021,418	2,252,151	250,285	312,175
Mixed Corn	121,560	115,822	25,917	26,839
Rye	95,068	106,132	526	386
Beans	255,068	281,990	2,074	2,636
Peas	164,895	162,775	782	704
Potatoes	516,033	446,341	27,682	29,035
Turnips and Swedes	935,786	925,579	55,622	57,819
Mangold	375,287	382,982	10,579	13,069
Cabbage	61,218	50,825	883	757
Kohl-Rabi	10,780	9,437	240	192
Rape	86,565	79,396	13,712	13,837
Vetches or Tares	120,513	76,239	1,219	723
Lucerne	44,268	38,519	233	242
Hops	21,002	16,745	—	—
Small Fruit	58,084	58,096	730	603
Clover, Sainfoin, and Grasses under Rotation	2,161,759	2,009,385	286,604	249,050
Other Crops	211,987	204,942	1,996	2,103
Bare Fallow	556,060	639,073	10,536	11,366
	No.	No.	No.	No.
Horses used for Agricultural purposes [2]	706,848	728,509	82,091	85,689
Stallions being used for service	5,766	6,097	1,126	1,107
Unbroken Horses: One year and above	193,561	189,986	35,032	33,637
Unbroken Horses: Under one year	78,168	84,107	19,130	19,898
Other Horses	220,307	214,914	23,609	22,880
TOTAL OF HORSES	1,204,740	1.223,613	160,988	163,211
Cows and Heifers in Milk	1,587,615	1,693,808	240,118	249,858
Cows in Calf but not in Milk	218,884	263,625	24,125	28,666
Heifers in Calf	258,876	290,674	23,210	26,852
Bulls being used for service	69,632	75,969	12,388	13,009
Other Cattle:—Two years and above	998,297	985,861	97,533	92,242
,, ,, One year and under two	933,732	1,071,970	175,270	199,422
,, ,, Under one year	751,130	1,007,555	155,995	195,028
TOTAL OF CATTLE	4.818,166	5,389,462	728,639	805,077
Ewes kept for Breeding	3,777,237	4,367,770	1,331,215	1,396,530
Rams and Ram Lambs to be used for service	111,228	108,155	44,878	48,592
Other Sheep:—One year and above	2,251,323	2,779,276	597,418	632,021
,, ,, Under one year	4,084,874	4,644,348	1,184,498	1,147,621
TOTAL OF SHEEP	10,224,664	11,899,549	3,158,009	3,224,764
Sows kept for Breeding	262,516	225,748	27,030	25,004
Boars being used for service	18,900	16,069	2,033	2,513
Other Pigs	1,532,961	1,385,425	150,484	143,709
TOTAL OF PIGS	1,814,377	1,627,242	179,547	171,226

[1] Not including Mountain or Heath Land.

[2] Including Mares kept for breeding.

TABLE III.—**Hops** :—*Total Produce, Acreage, and Yield per Acre, in* 1920 *and* 1919, *in each County of England in which* **Hops** *were grown ; and the Average Yield of the Ten Years* 1910–1919.

COUNTIES	Total produce		Acreage		Yield per acre		Average of the Ten years 1910–19
	1920	1919	1920	1919	1920	1919	
	Cwt.	Cwt.	Acres	Acres	Cwt.	Cwt.	Cwt.
TOTAL FOR ENGLAND	281,000	189,000	21,002	16,745	13·4	11·3	10·1
Kent: East . .	49,000	27,000	3,258	2,529	15·2	10·6	10·8
Kent: Mid. . .	72,000	45,000	4,520	3,652	15·9	12·4	11·5
Kent: Weald . .	85,000	50,000	5,710	4,378	14·8	11·4	10·6
Total—Kent	206,000	122,000	13,488	10,559	15·3	11·6	11·0
Hampshire	10,000	7,100	838	757	11·8	9·4	10·1
Surrey	2,000	1,500	172	181	12·7	8·2	8·1
Sussex, East . . .	25,000	14,300	1,722	1,361	14·6	10·5	9·8
,, West . . .	1,000	600	66	53	14·7	11·3	
Gloucester	—	—	4	—	—	—	4·2[1]
Hereford	23,000	26,000	2,993	2,415	7·7	10·9	7·8
Salop	120	470	52	47	2·3	10·0	7·2
Worcester	14,000	16,600	1,667	1,372	8·3	12·1	8·3

[1] Average of 7 years only.

TABLE IV.—*Annual Average* **Prices**, *per Imperial Quarter and per Imperial Bushel, of* **British Corn**, *in England and Wales, from* 1914 *to* 1920 ; *with the Value of* £100 *of Tithe Rent-Charge, based on the Septennial Average Prices.*

YEAR	Annual average price per Imperial Quarter						Annual average price per Imperial Bushel						Value of tithe rent-charge of £100[1]		
	Wheat		Barley		Oats		Wheat		Barley		Oats				
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	£	*s.*	*d.*
1914	34	11	27	2	20	11	4	4¼	3	4¾	2	7½	77	1	4¼
1915	52	10	37	4	30	2	6	7¼	4	8	3	9¼	83	2	6¾
1916	58	5	53	6	33	5	7	3½	6	8¼	4	2	92	1	0¼
1917	75	9	64	9	49	10	9	5½	8	1	6	2¾	109	3	11
1918	72	10	59	0	49	4	9	1¼	7	4½	6	2	[1]109	3	11
1919	72	11	75	9	52	5	9	1¼	9	5½	6	6½	[1]109	3	11
1920[2]													[1]109	3	11

[1] The Septennial Average Price of British Corn, for the seven years ended 1835, upon which the amount of Tithe Rent-charge was calculated, was for Wheat 7*s.* 0¼*d.*, for Barley 3*s.* 11½*d.*, and for Oats 2*s.* 9*d.*, per Imperial Bushel. The Tithe Act, 1918, fixes the value of Tithe Rent-charge up to the year 1925 inclusive, at the sum payable in 1918, *i.e.*, the value based on the septennial averages for the period ended 1917.

[2] Figures for 1920 not yet published.

NOTES, COMMUNICATIONS, AND REVIEWS.

The Italian Agronomical Society.—The Italian Agronomical Society has been started in Rome with temporary headquarters in Via dei Crescenzi No. 26 (at the "Rivista di Biologia") with the idea of uniting all branches of science in any way connected with agriculture. The need of the methodical application of study and research in the field of Agricultural Science is stronger in Italy than elsewhere, where the study of specific problems has been up to the present somewhat neglected, and where particular conditions of various kinds render these problems more numerous and important than elsewhere. The limited finances of the nation, so acute in these times, make the need of a wider knowledge and a powerful organisation in connection with agriculture more keenly felt than ever.

The scientific study of the various branches of agricultural problems in the south of Italy cannot be considered individually, but ought to be founded on experiments conducted in a number of cases, under the most widely different conditions judged from the same point of view. Thus the individual scientific forces in each case which constitute the particular interest of the Society, and on which it specialises, are brought under the one directing head which combines the ideas and the experiments, and can offer to the Government those which are best and most reliable, by which to explain its action in favour of agricultural pursuits. The technical organisation which is being constituted in Italy really represents at the present time a great hope because it has been supported by almost all Italian scientists, whether biological, chemical, or agricultural.

The organisation of the Society is proceeding rapidly, the Advisory Committee having already been nominated, the statutes formulated and approved, and the main lines of immediate action decided upon with a plan for five branches of study, chosen from those capable of solving the most pressing problems.

The first sitting of the Committee held in Rome, July 29, arranged the basis of activities of the Society. The delegates for the principal centres of study were nominated. It was arranged to commence work on certain points with a view to starting at once on the practical field of work, taking into account the most urgent problems of the moment. Thus five branches were decided upon, and the studies will be carried out by means of special commissions composed of the most worthy and noted specialists in the particular branch concerned. 1st. Interesting researches on the best form of utilisation of arid and poor territory, with special attention paid to the resistance of drought, indicative of the adaptability of plants to drought (Professor Borzi, Director of the Colonial Botanical Institute Gardens, Palermo) 2nd. Research to investigate the limits of the yield capacity of wheat in southern areas, especially in connection with physiological features, influenced by physico-meteorological facts in that latitude (Dott. V. dei Duchi Rivera). 3rd. Research and means of combating the injurious insects to the olive (Sen. B Grassi, Director of the Institute of Anatomy, University of Rome) 4th. Research on the utilisation of leucite deposits abundant in Italy, for the production of potash manures (Dott. Borghesani, International Institute of Agriculture, Rome). 5th. Studies as to the cause and the expected results of root rot with a view to combat the said disease which destroys Sicilian citron fruits

The special Commissions inaugurated to investigate the various branches of Agricultural Science were constituted and the delegates for the different districts of Italy were nominated. In the midst of the evident chaos and disorder caused at the close of the war, the fact that the Italian Agronomist aims at instituting an organisation for study justifies the hope of a successful issue from present difficulties.

L'Agriculture moderne, by Daniel Zolla, Professeur à l'école de Grignon (Flammarion, Paris).

"If our young farmer has any relation, friend, or confidential bailiff that he can trust his farm to for ten days or a fortnight, let him now take his nag for a summer tour, to view some farms in well-cultivated counties, and to introduce himself to the conversation of his intelligent brethren, from whom he will be sure to learn something useful" Thus Arthur Young in June, 1800. *Mutato nomine* the advice still holds, and from few of the farmer's "intelligent brethren" can he learn more than from the French experts, who combine practical common sense with the power of philosophical generalisation characteristic of their race. Professor Zolla of the well-known School at Grignon here sets out his views on agriculture; the treatment is broadly scientific rather than practical. The improvements of the last century were many and their effects striking: in 1789 the population of France was 26,500,000; before the war it had increased to 40,000,000, who were not only being fed from the same area of land, but were being better fed. Progress is attributed only in part to the development of the cultural methods usually held to account for most of it; the chief factors are the development of agricultural capital, of means of transport, and of specialised farming; in other words, progress has resulted from both technical and economic developments. The dominating circumstance in agriculture is that human effort is not the determining factor: men may sow, but they cannot ensure that they will reap: the harvest depends on the plant, the season, and other natural agencies entirely, or almost entirely, beyond human control. The position therefore differs fundamentally from that in manufacturing concerns where almost everything is determined by human effort.

The simplest method of cultivation is afforestation, which when properly carried out is very profitable in France. "Money seems to tumble out of the soil," writes an ardent forester. The more usual and necessary culture, however, is that of crops which implies returning something to the land. He wisely accepts Dombasels' defence of the old open-field system as the most suitable for the times and circumstances. Its simplicity enabled it to be worked by men without capital or knowledge, for which reason it still survives in some of the new countries; but in crowded countries it has gone.

The chief factor in the improvements of the last century was the introduction of artificial manures, which he attributes to the Duke of Richmond instead of to Lawes. He describes the remarkable effects produced by phosphates on the granite, silurian and Devonian soils of the west of France, notably Brittany and Maine, which have led to a marked increase in the acreage of wheat and in the number of animals kept. The nitrogenous and potassic fertilisers have also proved highly effective. But there are still great advances to be made. More attention to water supply is very necessary. Parts of France are already irrigated: 34,000 hectares of arable and 82,000 hectares of grass land; but much remains to be done and the problem is not entirely solved. Perhaps dry farming methods will help; these are described at some length, and some of the Californian results are given; at any rate the methods are worth trying in Algeria. Drainage also is certainly needed in places and, as in England, it was unfortunately becoming less common before the war; the mole drain, however, does not seem to have been tried.

The author then proceeds to look to the future and see what of modern science holds out most hope for the agriculturist. Soil microbiology and soil chemistry both offer much promise. He is an ardent supporter of Whitney's hypothesis that plants suffer more frequently from plant toxins than from exhaustion of nutrients; a view, however, which is not widely adopted by other agricultural chemists.

Having discussed at length the possibility of improving soils he turns to the improvement of the plant, showing how by selection and breeding the yield of sugar per ton of beet was raised from 55 to 100 kilograms, and how the phylloxera was controlled by the introduction of American vines. There is no question that the plant breeder can render conspicuous help to the agriculturist.

He next discusses the animal, and like some of the leading British experts, emphasises the importance of early maturity for animals which are to be slaughtered, and the need for steady improvements in all breeds of cattle.

Finally the economic problem is discussed. There is—or was before the war—a rural exodus in France just as in England, but this does not disturb the author. He attributes it to the greater producing power of the rural population which renders unnecessary the presence of so many men on the land for the purpose of raising food; the balance is therefore available for other occupations.

The book is one that every thoughtful farmer will enjoy reading, though he will not learn from it how the French manage their farms.

E. J. RUSSELL.

Conifers and their Characteristics. Charles Coltman-Rogers (London: John Murray, price 21*s.* net).

The author of this volume has acted for many years as Chairman of the Forestry Committee of the Royal Agricultural Society of England, and now he adds to our indebtedness by producing a most interesting volume. It is rarely that a book contains so much of the personality of the writer. On almost every page there are literary references, or classical quotations, or Biblical extracts, or quips of fancy, or quaint comparisons, which carry the reader happily along from one scientific fact to the next. Thus, about *Abies Webbiana*: "That it finds our climate to be generally unaccommodating is unfortunate, since it is a tree that is all-beautiful without and as all-glorious within, as those king's daughters that, we are told, upon the Psalmist's authority, at a moment of time when his heart was inditing of a good matter, were fitted to enter king's palaces." Or "The *Lambertiana* has only one rival in the championship, and if *Coulteri* carries off the welter-weight prize, the *Lambertiana* outpaces its rival in the long-distance stakes, while the *Ayacahuite* is a close runner-up."

The author arranges the many species of the respective genera into convenient groups and discusses their botanical characteristics and æsthetic value. It is a book on *trees*, in which silviculture or economic considerations have but little place.

The first section of the book deals with Pines, the second with the Silver Firs. We are reminded that if, on looking over a mature wood, a certain number of trees overtop the others, these are almost certain to be examples of the common silver fir. The separation of the species of this large genus is based on the leaves, which may be arranged equally all round the shoot, or in a plane on two sides (pectinate). They may cover over the upper side of the shoot or leave it exposed, they may or may not vary markedly in length, the apex may be notched or entire, blunt or sharp, and so on. Similarly as regards the branchlets and shoots, the points of distinction to be noted being (*a*) colour, (*b*) presence or absence of pubescence, (*c*) smoothness or roughness of the surface.

Group I, with leaves arranged radially all round the shoot comprises *A. Pinsapo* and *A. cephalonica.* The former comes from a very limited area in Spain and the latter from Greece and the adjoining islands. The former does not seem to find the climatic conditions of this country entirely to its taste, and we cannot therefore endorse the statement that "Both trees merit the universal recommendation to plant bestowed upon them by the authorities."

Group II comprises species whose leaves are arranged horizontally along the sides of the shoot. The most important member of this group is the common silver fir of Europe (*A. pectinata*). This tree has always been rather hard to establish in Britain on account of its liability to injury from spring frosts, and this difficulty has been increased of late years by reason of the spread of an Aphis, which soon brings young plants into an unhealthy condition. Another member of the group, *A. grandis,* has proved much more resistant to attack, and is now very generally substituted for *A. pectinata.* Moreover, it is a faster growing tree, and in fact in this respect does not fall far short of the Douglas fir and Sitka spruce.

Of Group III, the upper surface of whose shoots is obscured by leaves, *A. Nordmanniana* is the commonest species. When at its best it shows a fine dense mass of dark green foliage, but unfortunately of late years it has often been severely crippled by attacks of Aphis.

Of the members of the other three groups, *A. nobilis* is dismissed with few words and no recommendation, although it has probably been more extensively planted for ornamental purposes in this country than any other silver fir. Moreover, it is the one that is best adapted to growth at high altitudes, as is proved by its success, in situations well over a thousand feet, at such places as Corrour and Ardverickie in Inverness-shire, and Kidlands in Northumberland.

Mr. Coltman-Rogers gives a great character to the Douglas fir, and all who have had experience of this remarkable tree will endorse his good opinion. "We know, and that is all, that some occult influence impels the Douglas to grow with more celerity than any other forest tree we plant in masses. . . . Its timber results are more than promising, they are an accomplished fact. Its rapidity of growth is phenomenal." The author, in discussing situations unsuitable to the Douglas fir, fails to mention its aversion to lime. This, and the fact that it is apt to lose its leader when exposed to the full force of heavy gales, are its most serious limitations. Taken all in all it is beyond question the most valuable species of forest tree that has ever been introduced into this country.

In subsequent chapters the author learnedly discourses on the spruces, cypresses, junipers, yews, and other less important members of the Order Coniferæ. Then follows a useful set of tables to assist in the identification of genera and species. These, by many, will be regarded as the most useful part of the book, which finishes with a glossary of terms.

The whole work is unconventional in treatment, even to the extent of systematically ignoring the recognised rules of nomenclature, the specific names being invariably spelt with a capital letter. There are certain inaccuracies that are not, however, serious, as for instance, when on p. 141 in consecutive lines "Brocklesbury" is printed for Brocklesby, and '*Arboricultural Journal*" for *Quarterly Journal of Forestry*.

W. SOMERVILLE.

THE DARLINGTON SHOW, 1920.

President: His Royal Highness the Prince of Wales, K.G.

For the second time in the history of the Society the Annual Show was held at Darlington On the previous occasion, in 1895, the site was at Hummersknott, which was most picturesquely situated; but, having regard to the distance of Hummersknott from the Railway Station, the Darlington Local Committee decided to secure 120 acres of land adjacent to the North Eastern Railway Station, with the sidings running into the Yard. While the surrounding scenery could not compare with that at Hummersknott, the convenience to exhibitors and the public was very great.

As will be seen from the following Table. the number of entries and of visitors to the Show greatly exceeded those of 1895:—

Year	President	Implements entered	Entries of Live Stock	Number of persons admitted	Financial Result (+ = Profit − = Loss)
1895	Sir J. H Thorold, Bart. . . .	5,855	1,703	100,810	+ £653
1920	H.R.H. Prince of Wales, K.G . .	4,809	3,463	182,892	—£7,766

In both the Implement and Live Stock, &c., Sections, the entries were numerous and the general excellence of the exhibits was more pronounced than at any previous Show. The Darlington Show can safely be described as excellent, although the financial result was nothing less than disastrous.

The excess of expenditure over receipts on this occasion must be attributed to the increased cost of labour and materials and railway charges for the carriage of plant, timber, &c.

The Show opened on Tuesday in brilliant weather, but just as the judging of the Live Stock Classes commenced there was a shower of rain. On the whole, however, the weather conditions were very pleasant. The attendance on this day exceeded that of any previous "Judging" day, and by 10 o'clock the day's stock of catalogues was completely sold out.

On Wednesday His Royal Highness the Duke of York visited the Show, having motored from Wynyard Park with the Marquess and Marchioness of Londonderry, Lady Maureen Stewart, and other guests. Before reaching the Showyard His Royal Highness went to the Town Hall, where he was received by the Mayor, Members of the Corporation and other Officials of the Town and County. An address of welcome was read by the Town Clerk and presented by the Mayor (Councillor Thomas Crooks). His Royal Highness, in reply, expressed his gratification at being able to follow the example of his father and mother and visit the borough on the occasion of the Royal Agricultural Show. On arriving at the Showyard the Duke of York was received at the entrance by Sir Gilbert Greenall, the Honorary Director, and proceeded to the Royal Pavilion, outside which Members of Council and representatives of the Counties of Durham, Northumberland and Yorkshire were assembled. Subsequently His Royal Highness attended the General Meeting of Governors and Members of the Society, the Marquess of Londonderry (Acting-President) being in the Chair. In opening the proceedings Lord Londonderry deeply regretted the absence of H.R.H. the Prince of Wales, who was President of the Society, but who, as they all knew, was visiting the Overseas Dominions, and making friends amongst our brethren in distant parts of the Empire. His Lordship extended the warmest greetings on behalf of the Society to the Duke of York, who had been good enough to visit the Show, thus giving evidence of his participation in the keen interest the Royal Family always took in everything pertaining to the welfare of the people and especially in the progress of Agriculture. He then said that he had great pleasure in asking His Royal Highness to become a Member of the Society, and, on the election being carried by acclamation, handed His Royal Highness the Member's Badge. The Duke of York then expressed his pleasure at being able to attend the Show in the year that his brother, the Prince of Wales, was President of the Society, and thanked Lord Londonderry and the Governors and Members for making him a Member of the Society. He congratulated all those responsible for the success of the Darlington Show.

The Mayor, in response to the resolution of thanks to the Mayor and Corporation of Darlington, said that the Corporation had given the Society their cordial support and co-operation in connection with the Show. Darlington was undoubtedly a fine agricultural centre and they also had railway and industrial resources of great importance. He trusted that this country would so build up its Agriculture that in the future it would not be necessary to be so dependent as it had been upon supplies of food from abroad. At the close of the Meeting His Royal Highness returned to the Royal Pavilion, and after luncheon made a tour of inspection of the Showyard, proceeding later to the Grand Stand at the Horse Ring. His Royal Highness left the Showyard by the Hundens Lane Gate in order that he might pass by the Isolation Hospital, and this kind action was gratefully appreciated by the large number of patients who, otherwise, would not have had an opportunity of seeing His Royal Highness.

On Thursday the Duke of York again visited the Show and

COMPARATIVE STATEMENT OF ENTRIES, &c.,

At two Shows held at Darlington in 1895 and 1920.

Horses and Cattle	1895		1920	
	Classes	Entries	Classes	Entries
HORSES :—				
Prizes .	—	*£2,012*	—	*£3,606*
Shires	7	95	11	65
Clydesdales. . .	7	70	9	76
Suffolks. . . .	5	34	10	68
Percheron . . .	—	—	5	41
Hunters—				
Breeding Classes	12	173	12	83
Riding Classes .	—	—	7	69
Polo and Riding Ponies—				
Breeding Classes	—	—	5	24
Hack and Riding Ponies . . .	—	—	5	36
Arabs	—	—	2	11
Cleveland Bays .	7	48	4	14
Coach Horses . .	7	34	4	14
Hackneys . . .	12	106	7	37
Hackney Ponies .	3	18	4	15
Dales Ponies . .	—	—	4	30
Fell Ponies . .	—	—	4	9
Welsh Ponies . .	—	—	5	14
Shetland Ponies .	2	15	2	16
Driving Classes .	2	20	8	53
Trade Turnouts .	—	—	4	4
Pit Ponies . . .	2	11	2	16
Agricultural Horses	3	26	5	19
Jumping . . .	—	—	5	72
Total for HORSES	69	650	124	786
CATTLE :—				
Prizes .	—	*£1,740*	—	*£3,077*
Shorthorn . . .	7	124	11	206
Dairy Shorthorn .	—	—	10	171
Lincolnshire Red Shorthorn . .	—	—	8	60
Hereford . . .	6	50	8	86
Devon	4	28	6	30
South Devon . .	—	—	5	27
Longhorn . . .	—	—	4	11
Sussex	4	20	5	20
Welsh	2	8	6	30
Red Poll . . .	4	22	6	69
Park Cattle . .	—	—	3	13
Aberdeen-Angus .	7	60	6	63
Galloway . . .	7	46	5	33
Highland . . .	2	3	2	—
Ayrshire . . .	4	14	3	16
British Friesian .	—	—	6	96
Jersey	5	91	7	90
Guernsey . . .	4	32	7	63
Kerry	2	13	5	27
Dexter	2	14	5	42
Shetland . . .	—	—	2	7
Dairy Cattle . .	4	23	2	15
Milk Yield . . .	—	—	13	118
Butter Tests . .	—	—	8	81
Total for CATTLE	64	548	138	1,374

Goats, Sheep, Pigs, Poultry, Rabbits, Produce	1895		1920	
	Classes	Entries	Classes	Entries
GOATS :—				
Prizes .	—	—	—	*£94*
	—	—	15	143
SHEEP :—				
Prizes .	—	*£1,170*	—	*£2,077 10s.*
Oxford Down . .	4	25	5	49
Shropshire . . .	4	93	7	64
Southdown . .	4	50	6	64
Hampshire Down .	4	38	6	53
Suffolk	4	23	6	49
Dorset Horn . .	2	8	4	11
Ryeland . . .	—	—	5	46
Kerry Hill (Wales)	—	—	4	26
Lincoln	4	27	6	69
Leicester . . .	4	44	5	18
Border Leicester .	5	47	4	27
Wensleydale . .	5	47	7	52
Lonk	2	8	3	6
Derbyshire Gritstone	—	—	2	1
Kent or Romney Marsh . . .	2	15	6	84
Cotswold . . .	4	12	4	19
Devon Long Wool.	—	—	3	5
South Devon . .	—	—	5	11
Dartmoor . . .	—	—	3	10
Cheviot . . .	3	12	4	12
Herdwick . . .	2	14	3	9
Welsh Mountain .	2	14	3	16
Blackfaced Mountain	3	28	4	19
Blackfaced Dales Bred	—	—	4	19
Total for SHEEP.	58	505	109	739
PIGS :—				
Prizes .	—	—	—	*£1,499 5s.*
Large White . .	—	—	8	115
Middle White . .	—	—	8	71
Tamworth . . .	—	—	6	27
Berkshire . . .	—	—	8	91
Large Black . .	—	—	6	179
Lincolnshire Curly Coated . . .	—	—	6	21
Gloucestershire Old Spots . . .	—	—	6	115
Cumberland . .	—	—	6	18
Wessex Saddleback	—	—	6	24
Essex	—	—	6	31
Total for PIGS .	—	—	66	692
POULTRY :—				
Prizes .	—	*£234*	—	*£477*
	84	769	154	1,387
RABBITS and CAVIES :—				
Prizes .	—	—	—	*£157 5s.*
Rabbits. . . .	—	—	37	390
Cavies	—	—	12	107
PRODUCE :—				
Prizes .	—	*£286*	—	*£413 10s.*
	34	476	59	475

Grand Totals for LIVE STOCK, POULTRY, and PRODUCE.	**1895**	**309 Classes**	**2,948 Entries**	**£5,603 [1] Prizes**
	1920	**714 Classes**	**6,093 Entries**	**£11,700 [2] Prizes**

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[1] Including £161 for Competitions.

[2] Including £300 for Horticultural Exhibition.

STATEMENT OF ENTRIES FOR THE 1920 SHOW, COMPARED WITH PREVIOUS YEARS.

Entries of Live Stock, Poultry and Produce.

	Darlington, 1920	Cardiff, 1919	Manchester, 1916	Nottingham, 1915	Shrewsbury 1914.	Bristol, 1913	Doncaster, 1912	Norwich, 1911	Darlington, 1895
Horses . . .	[1]714	[1]569	[1]518	[1]500	[1]819	[1]584	[1]773	[1]716	650
Cattle .	[1]1,175	[1]867	[1]803	[1]862	[1]1,272	[1]1,138	[2]1,089	[1]1,065	548
Goats . .	[1]143	91	92	—	—	—	—	—	—
Sheep . .	739	586	607	575	[1]886	736	[2]734	746	505
Pigs . .	692	389	321	360	417	394	[2]426	416	[3]—
Total. .	3,463	2,502	2,341	2,297	3,394	2,852	3,022	2,943	1,703
Poultry. .	1,476	1,383	1,519	1,286	1,373	1,436	1,242	1,218	769
Rabbits. .	390	278	—	—	—	—	—	—	—
Cavies . . .	107	—	—	—	—	—	—	—	—
Produce . .	475	387	565	461	895	[4]685	559	670	474

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[1] Exclusive of Double Entries

[2] Exhibition of Cattle, Sheep and Pigs prohibited by order of Board of Agriculture.

[3] Exhibition of Pigs prohibited by order of Board.

Shedding in Implement Yard (in Feet).

Description of Shedding	Darlington, 1920	Cardiff, 1919	Manchester, 1916	Nottingham, 1915	Shrewsbury, 1914	Bristol, 1913	Doncaster, 1912	Norwich, 1911	Darlington, 1895
Ordinary . .	5,410	4,540	3,300	4,885	6,610	6,870	7,050	6,690	7,528
Machinery . .	5,710	4,200	1,290	2 935	3,405	3,665	3,125	3,095	2,718
Special . . . (Seeds, Models, etc)	3,374	2,469	2,480	2,884	3,473	3,689	3,363	3,907	2,351
Total. . . [Exclusive of open ground space]	14,494	11,209	7,070	10,704	13,488	14,224	13,538	13,692	12,597
No of Stands .	471	371	239	339	130	513	442	457	393

(1) *Admissions by Payment at Darlington*, 1920.

Day of Show	11 a m	1 p m	3 p m.	5 p m	Day's total
Tuesday (*5s.*) . .	6,546	9,879	11,115	11,357	11,397
Wednesday (*3s.*)	23,648	42,043	50,127	51,354	51,479
Thursday (*3s.*)	29,398	46,065	51,838	52,538	52,626
Friday (*2s.*) . .	20,485	32,230	38,983	40,308	40,389
Saturday (*2s.*)	12,409	18,594	25,147	26,911	27,001
				Total Admissions . .	182,892

(2) *Total daily admissions at the* 1920 *Show, compared with the previous six Shows and the Darlington Show of* 1895.

Day of Show	Darlington, 1920	Cardiff, 1919	Manchester, 1916	Nottingham, 1915	Shrewsbury, 1914	Bristol, 1913	Doncaster, 1912	Darlington, 1895
First . . .	11,397	8,466	4,067	1,641	2,166	1,769	1,377	2,172
Second. . .	51,479	45,096	29,145	12,321	12,566	21,632	10,780	12,046
Third . . .	52,626	68,838	36,938	30,798	19,317	31,155	18,914	24,942
Fourth. . .	40,389	36,292	40,874	26,034	39,397	78,702	39,254	43,073
Fifth . . .	27,001	33,002	38,173	33,089	14,357	45,890	19,814	17,503
	182,892	191,694	149,197	103,883	87,803	179,148	90,139	100,310[1]

[1] Including 574 admissions on Saturday (Implement Yard only).

watched the parades of animals in the Large Ring, where in the opinion of many there was the most splendid collection of animals ever seen at a Show. His Royal Highness attended the Luncheon in the Showyard given by the Mayor. In responding to the Royal toast proposed by the Mayor, His Royal Highness referred to the Darlington War Memorial, which was to be a hospital, and said the idea was a splendid one. Although there was a steady downpour of rain during the day there was a very large attendance of visitors. On Friday rain again fell, causing much disappointment and inconvenience to the large number of school children who attended. The Royal Pavilion was open to visitors on payment of threepence for admission, the proceeds being handed to the Darlington Hospital. On Saturday, the closing day of the Show, it was raining the greater part of the day.

As a whole the Show was perhaps the best that has been held by the Society, the horses being exceptionally good, while a finer show of cattle had not been seen for many years. Illustrations of the champion animals in this latter section accompany this report.

The sheep and pig sections were excellent, twenty-four breeds of the former being fully represented and the pigs more numerous than ever. Particulars as to entries, classes and prizes are given in the tables on pp. 138 and 139.

A noticeable feature was the exhibition of portraits and prints of early Shorthorn cattle, arranged and carried out by Mr. William Parlour, Prof. Douglas Gilchrist and Mr. F. Dallimore, the Corporation Librarian.

Interesting lectures on non-slipping horseshoes were given by Major Brennan de Vine, who explained that shoes and anti-slipping appliances which more nearly copied Nature were found to be the best and most useful types for use on horses for all surfaces. Despite the difficulties of transport the excellence of

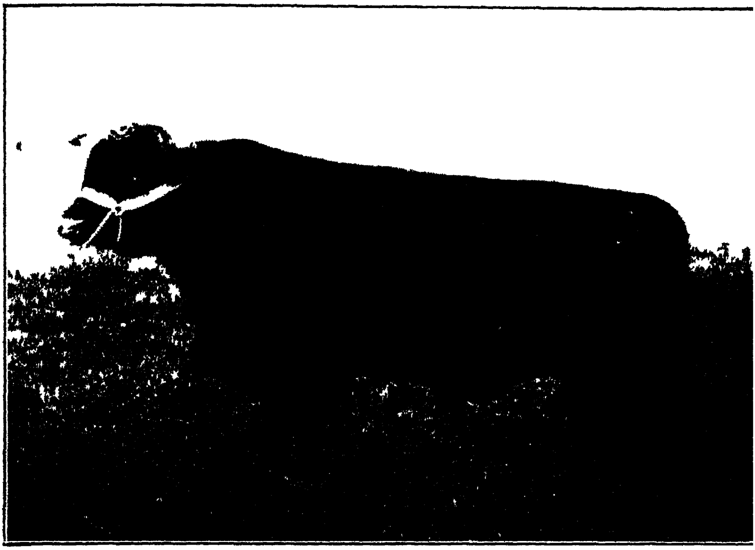

FIG 1—SHORTHORN BULL, "SANQUHAR GRAND COURTIER"
Winner of Champion Prize for best Shorthorn Bull Darlington, 1920
Exhibited by MR OLIVER W PORRITT

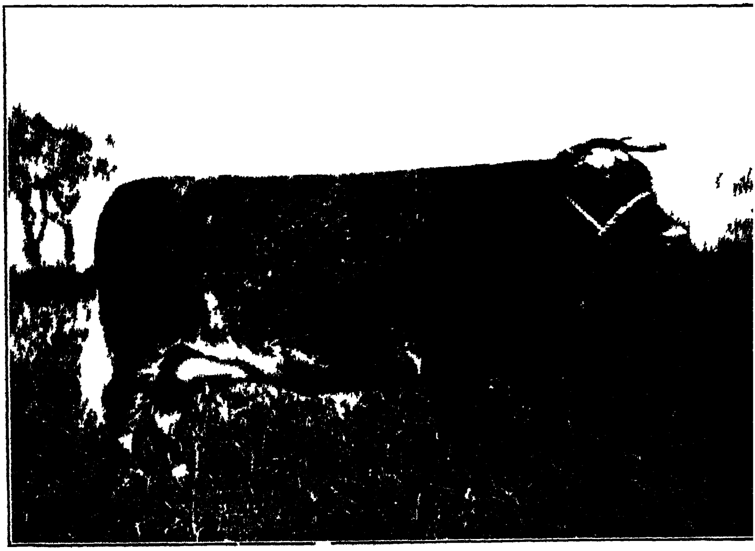

FIG 2—SHORTHORN COW, "BALNAKYLE AUGUSTA 2ND"
Winner of Champion Prize for best Shorthorn Cow or Heifer, Darlington, 1920
Exhibited by MR W M CAZALET.

FIG 3—DAIRY SHORTHORN BULL, "BABRAHAM LORD PRICE"
Winner of Champion Prize for best Dairy Shorthorn Bull, Darlington, 1920
Exhibited by MR ROBERT N TORY.

FIG 4—DAIRY SHORTHORN COW, "BARE CHARM"
Winner of Champion Prize for best Dairy Shorthorn Cow or Heifer, Darlington, 1920.
Exhibited by THE DUKE OF WESTMINSTER, G C V O, D S O

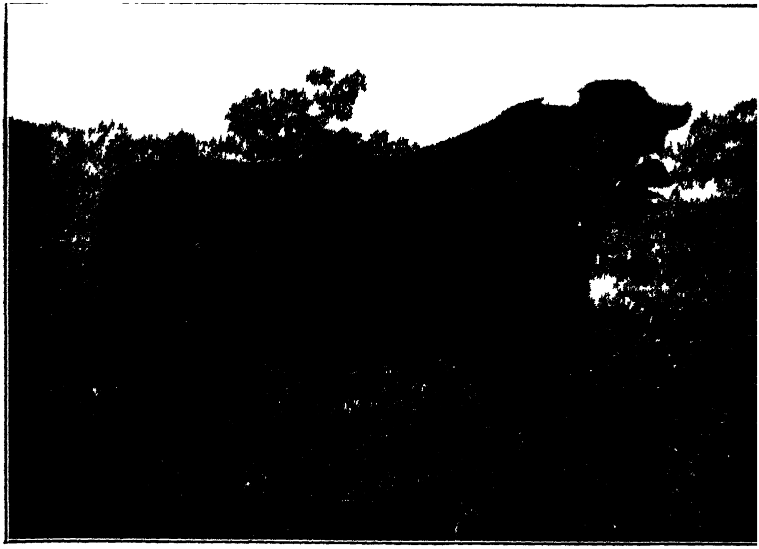

FIG 5—LINCOLNSHIRE RED SHORTHORN BULL, RISBY DANDY
Winner of Champion Prize for best Lincolnshire Red Shorthorn Bull Darlington, 1920
Exhibited by MRS M M WEBB AND SONS

FIG 6—LINCOLNSHIRE RED SHORTHORN HEIFER FLAWBOROUGH NANCY ’
Winner of Champion Prize for best Lincolnshire Red Shorthorn Cow or Heifer, Darlington, 1920
Exhibited by MAJOR H COOPER

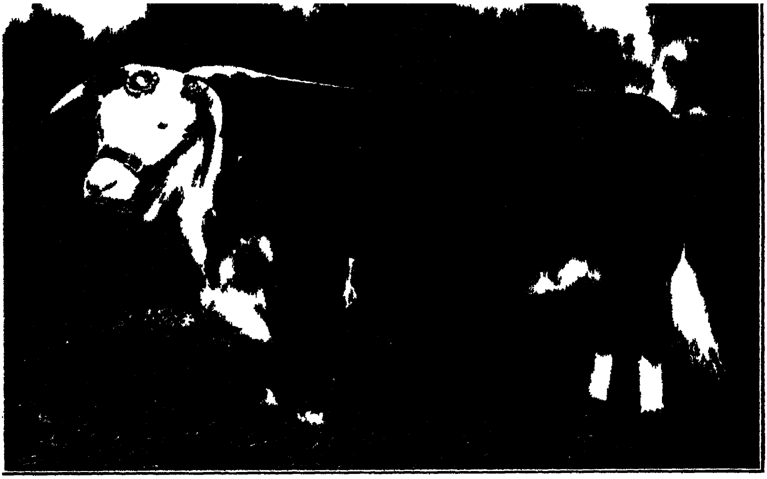

FIG. 7.—HEREFORD BULL, "RESOLUTE."
Winner of Champion Prize for best Hereford Bull, Darlington, 1920
Exhibited by MR. T. ROB THOMPSON.

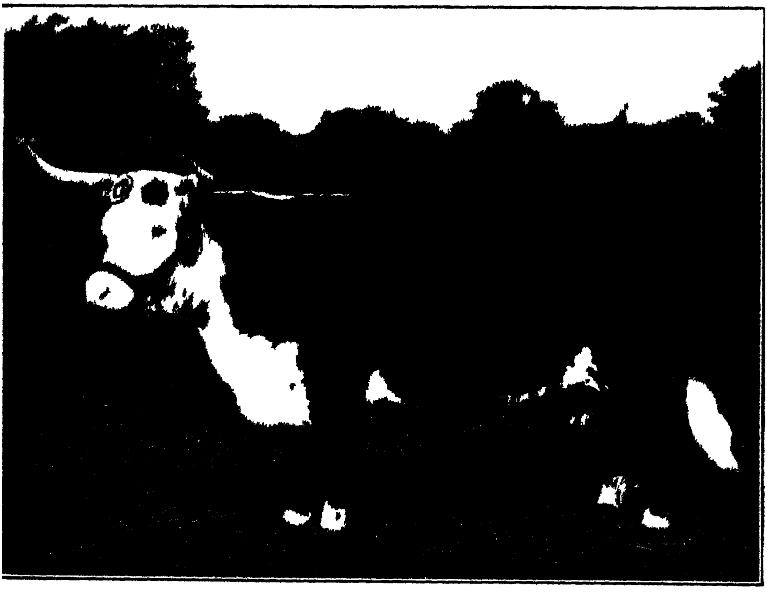

FIG. 8.—HEREFORD COW, "GARLAND."
Winner of Champion Prize for best Hereford Cow or Heifer, Darlington, 1920.
Exhibited by THE EARL OF COVENTRY.

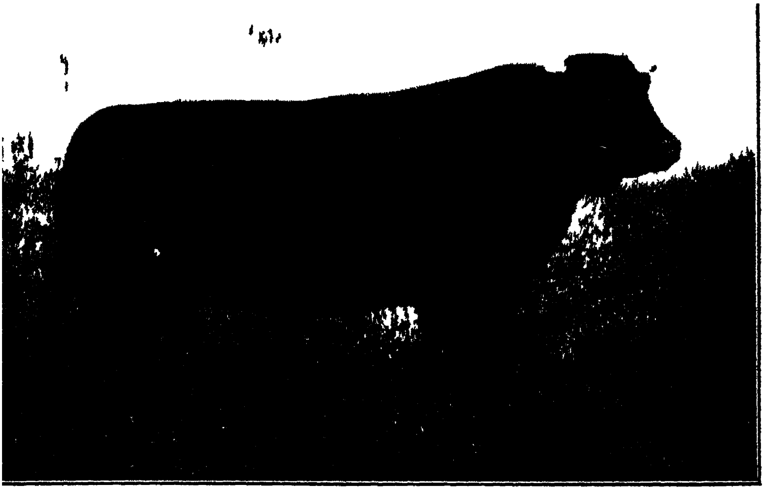

FIG 9 —DEVON BULL, "CLAMPIT GAY LADDIE"
Winner of Champion Prize for best Devon Bull, Darlington, 1920
Exhibited by H R H THE PRINCE OF WALES, K G

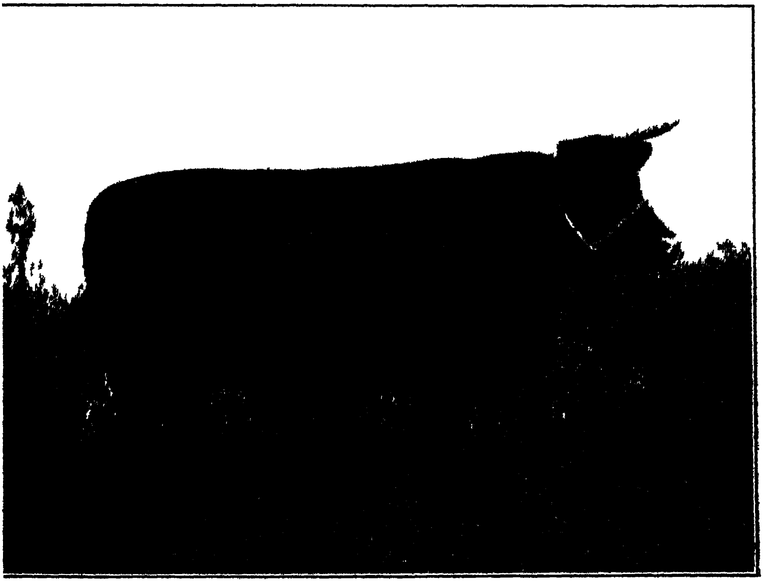

FIG 10 —DEVON HEIFER, "HIGHFIELD BELLE 3RD"
Winner of Champion Prize for best Devon Cow or Heifer, Darlington, 1920
Exhibited by MR CHARLES MORRIS

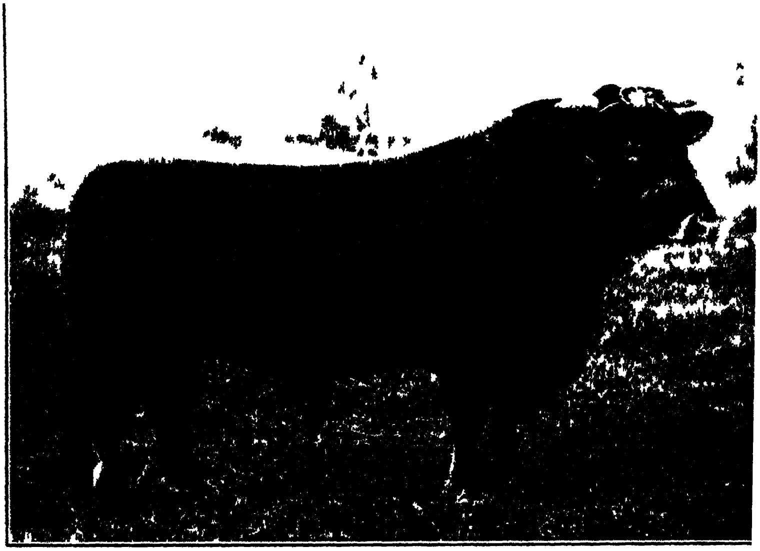

Fig 11—South Devon Bull "Bowden Strawberry Boy"
Winner of Champion Prize for best South Devon animal Darlington 1920
Exhibited by Mr Ben Luscombe

Fig 12—Longhorn Bull, "Whitacre Venture 2nd"
Winner of Champion Prize for best Longhorn Bull or Cow Darlington, 1920
Exhibited by Mr J W Swinnerton Weston

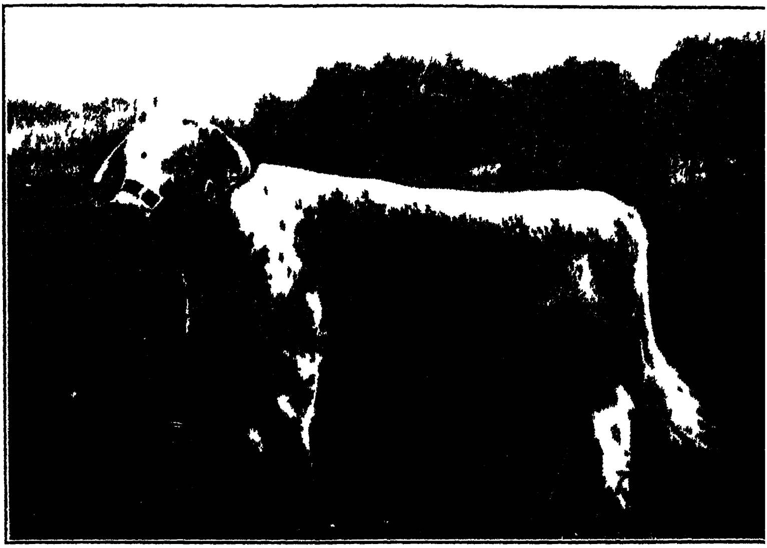

FIG 13 —LONGHORN HEIFER, PUTLEY DIANTHUS 2ND"
Winner of Champion Prize for best Longhorn Bull or Heifer, Darlington, 1920
Exhibited by MESSRS J L AND A RILEY

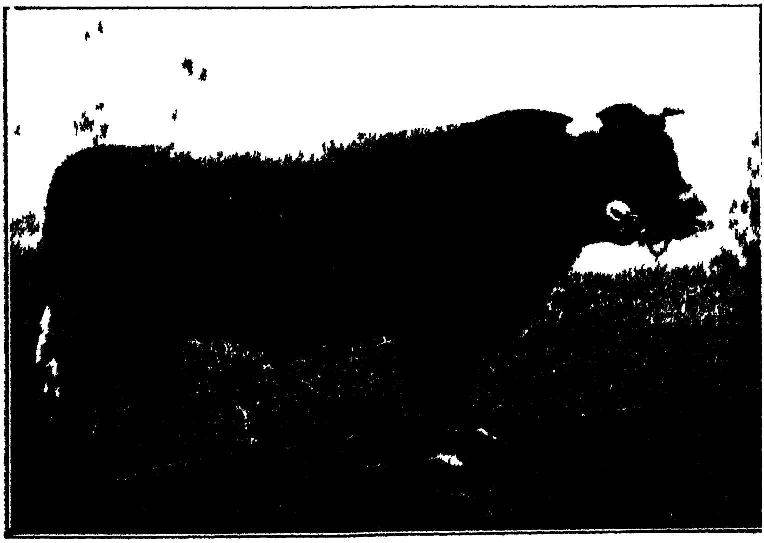

FIG 14 —SUSSEX BULL, "BROWNINGS MILLER 27TH"
Winner of Champion Prize for best Sussex Bull, Darlington, 1920
Exhibited by MR GEORGE T EATON

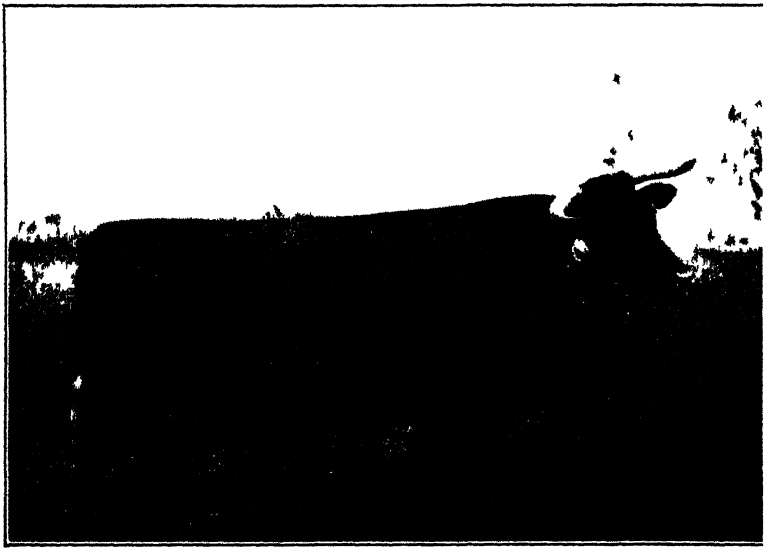

FIG 15 —SUSSEX COW, 'BROWNINGS STONESDOWN 1ST'
Winner of Champion Prize for best Sussex Cow or Heifer, Darlington, 1920
Exhibited by MR GEORGE T EATON

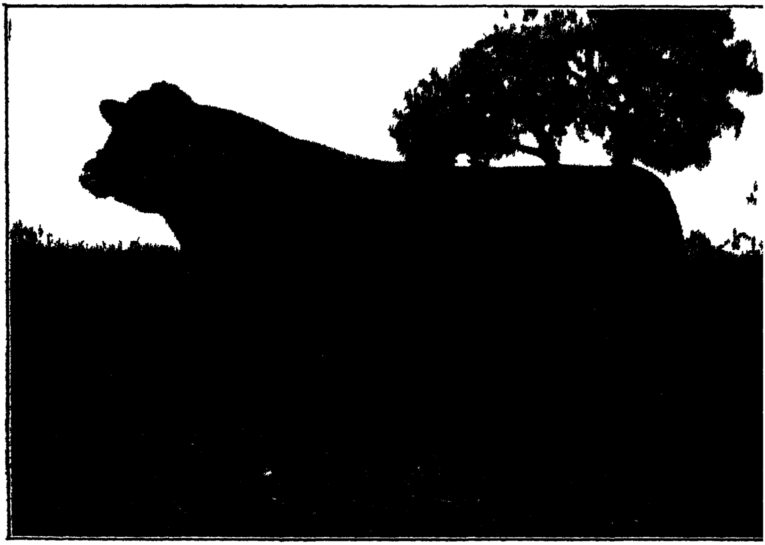

FIG 16 —RED POLL BULL, 'MARHAM DAUNTLESS"
Winner of Champion Prize for best Red Poll Bull, Darlington, 1920
Exhibited by MESSRS THOMAS BROWN AND SON

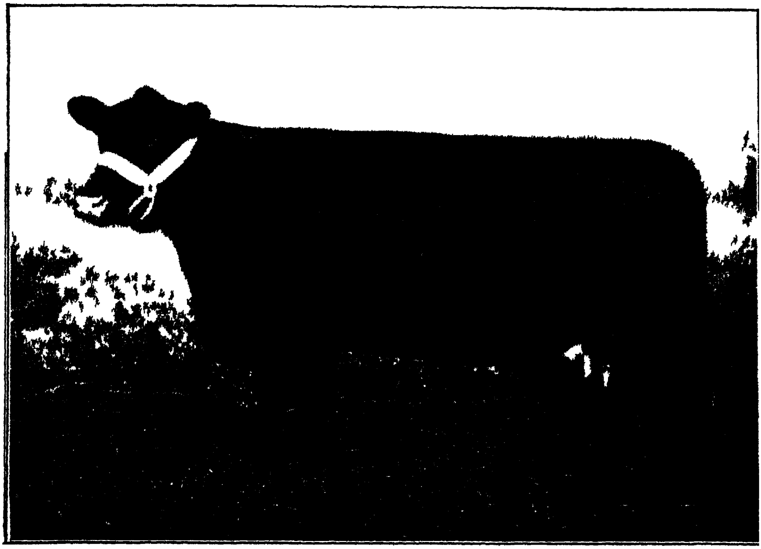

FIG 17—RED POLL COW, "SHOTFORD LADY MARY"
Winner of Champion Prize for best Red Poll Cow or Heifer, Darlington, 1920
Exhibited by MR J B DIMMOCK

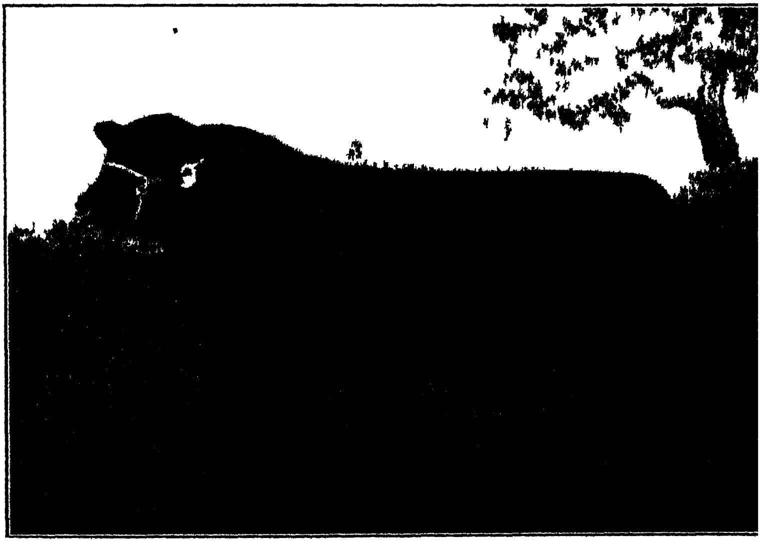

FIG 18—ABERDEEN ANGUS BULL, "ETRURIA OF BLEATON."
Winner of Champion Prize for best Aberdeen Angus animal, Darlington, 1920.
Exhibited by MR C T SCOTT

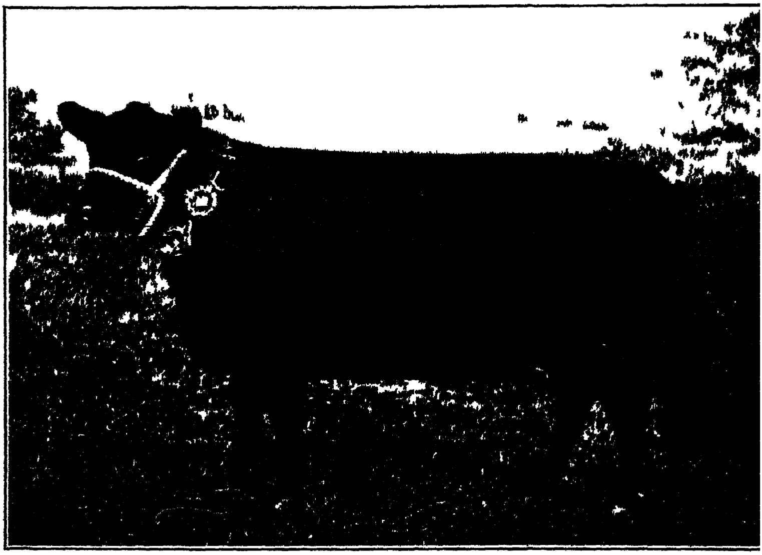

FIG 19—ABERDEEN ANGUS COW, "MENDOZA"
Winner of Champion Prize for best Aberdeen Angus Cow or Heifer, Darlington, 1920
Exhibited by MR JAMES KENNEDY

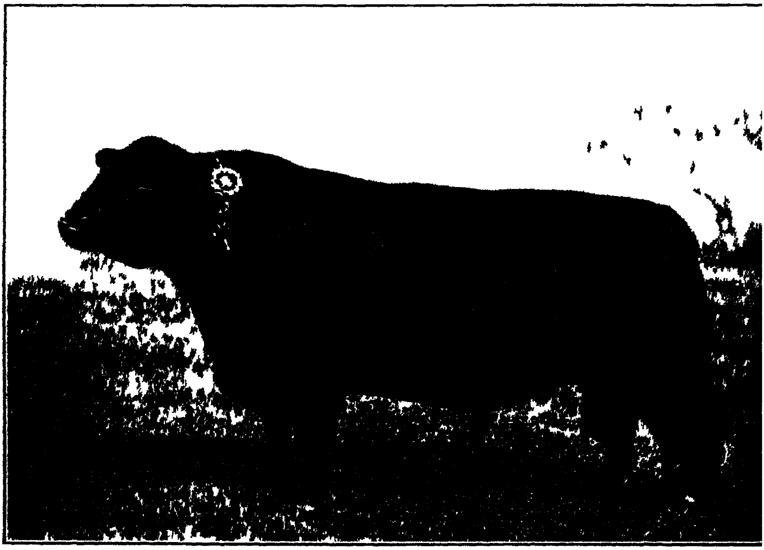

FIG 20—GALLOWAY BULL, 'JOVIAL OF BLACKCOMBE"
Winner of Champion Prize for best Galloway animal, Darlington, 1920
Exhibited by SIR ROBERT W BUCHANAN JARDINE, BART

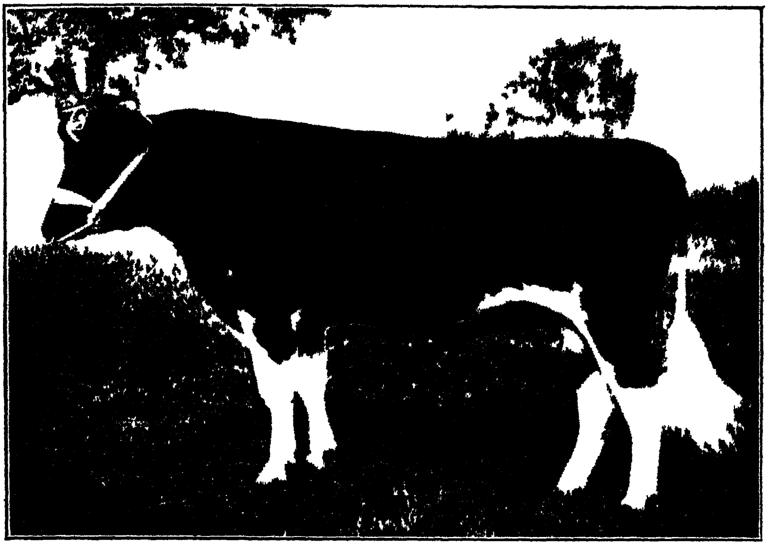

FIG 21—BRITISH FRIESIAN BULL BULKELEY KLASKE'S CERES'
Winner of Champion Prize for best British Friesian Bull, Darlington 1920
Exhibited by MR JAMES E HUGHES

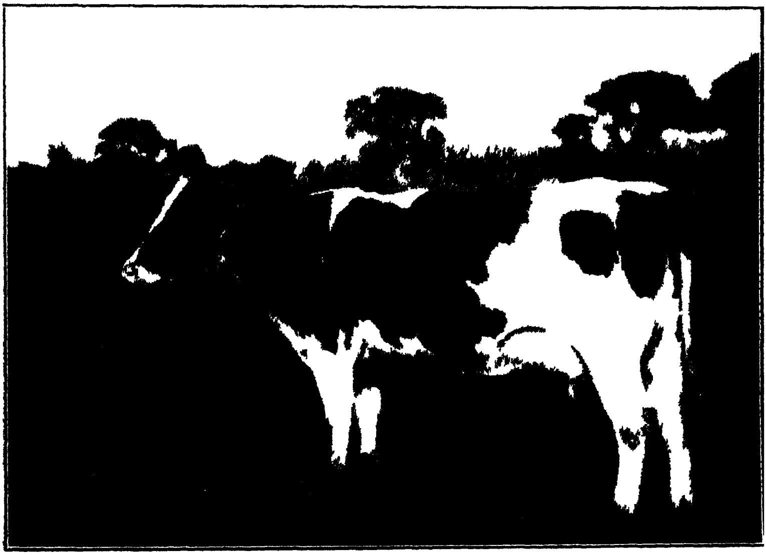

FIG 22.—BRITISH FRIESIAN COW, 'HEDGES DUTCH STATELY"
Winner of Champion Prize for best British Friesian Cow or Heifer, Darlington, 1920
Exhibited by MESSRS A AND J BROWN

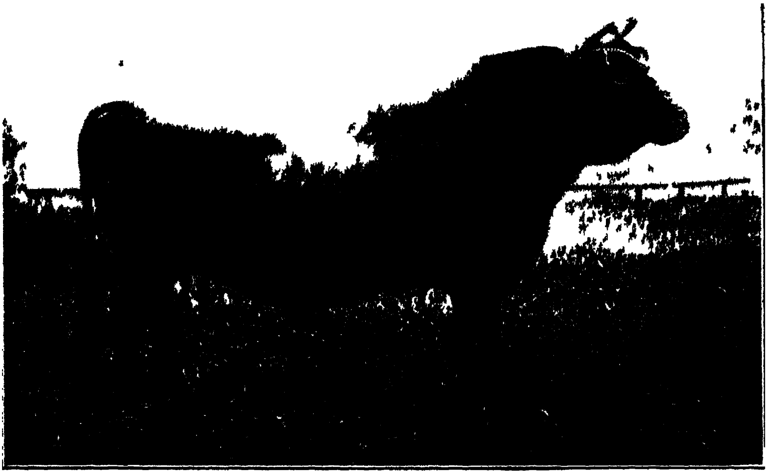

FIG 23.—JERSEY BULL, "PIONEERS NOBLE"
Winner of Champion Prize for best Jersey Bull, Darlington, 1920
Exhibited by MAJOR THE HON HAROLD PEARSON

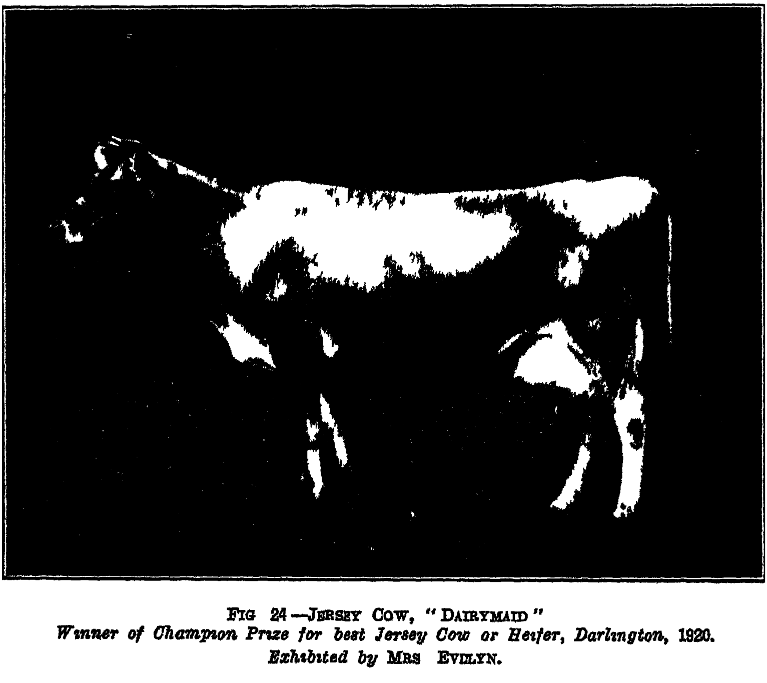

FIG 24.—JERSEY COW, "DAIRYMAID"
Winner of Champion Prize for best Jersey Cow or Heifer, Darlington, 1920.
Exhibited by MRS EVELYN.

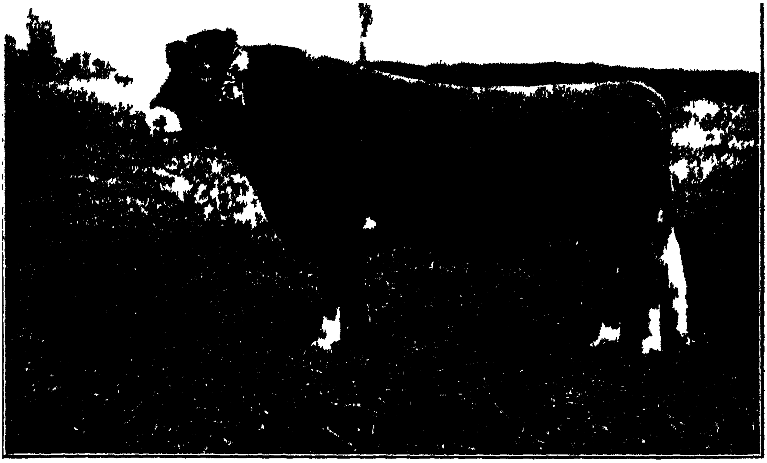

FIG 25 — GUERNSEY BULL, "HAMILL OF MARAZION"
Winner of Champion Prize for best Guernsey Bull, Darlington, 1920
Exhibited by MRS R C BAINBRIDGE

FIG 26 — GUERNSEY COW, "BOSISTOW GOLDEN HEART"
Winner of Champion Prize for best Guernsey Cow or Heifer, Darlington, 1920
Exhibited by H R H THE DUCHESS OF ALBANY

FIG. 27.—KERRY COW, "MINLEY MISTRESS."
Winner of Champion Prize for best Kerry animal, Darlington, 1920.
Exhibited by CAPTAIN NELSON ZAMBRA.

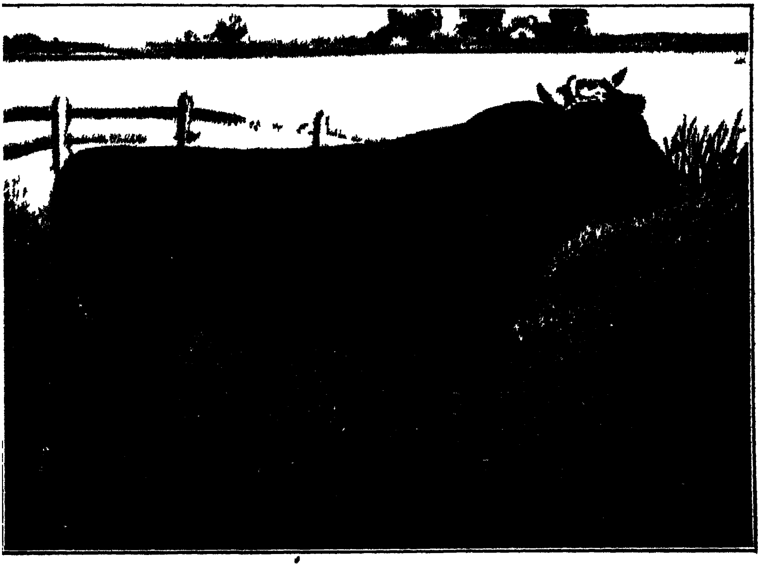

FIG. 28.—DEXTER BULL, "DOWNFORD DANDY."
Winner of Champion Prize for best Dexter animal, Darlington, 1920.
Exhibited by MR H. G. JONES.

the Horticultural, Forestry and Education Sections was maintained.

Many exceptional difficulties arose in connection with the preparation of the Showyard, more particularly with regard to the labour, which caused the Honorary Director much anxiety, but with the assistance of the Mayor and the Town Clerk these troubles were surmounted and the Show, as usual, was complete on the opening day. The Show was held in conjunction with the Durham and the Yorkshire Agricultural Societies, who on this occasion withheld their own Shows, and this arrangement undoubtedly contributed to the successful exhibition. To the Darlington Corporation the Society's thanks are due for the great assistance they rendered from the time it was decided to hold the 1920 Show in their town, and more particularly to the Mayor, whose speeches at the various official functions showed that he had practical knowledge of the value of agriculture to his town, and also of the importance of the maintenance of the industry at the highest possible level in the interest of the nation.

The Local Committee made excellent arrangements for the Show, and Mr. Harry G. Steavenson was indefatigable in carrying out the duties of Local Honorary Secretary. His services in many difficult situations which arose will long be remembered by the Honorary Director and other officials with whom he acted. The Borough Surveyor (Mr. G. Winter) also had a great deal to do in connection with the preparation of the Showyard, and with his assistants cheerfully carried out the Society's requirements, including the laying of the gas and water mains, which in these days entails a great deal of responsibility as well as expenditure.

The North Eastern Railway Company dealt with the traffic to and from the Show in a most efficient manner, all grades of officials working splendidly to accomplish this end. The erection of the large dock and siding adjoining the Showyard directly connected with the main line resulted in the provision of transport facilities unequalled in the history of the Society's Shows.

The services rendered by the Honorary Director are always of an onerous character, but this year they were considerably added to by the many difficulties which arose, and which frequently required immediate settlement. Consequently, for several months the time of Sir Gilbert Greenall was almost wholly taken up with the business of the show, and the Society are more indebted to him on this occasion than they even have been in previous years.

In the various departments of the Show the Stewards cheerfully and capably carried out their duties during a most trying week.

THOMAS MCROW.

MISCELLANEOUS IMPLEMENTS EXHIBITED AT DARLINGTON SHOW

The entry in the Implement Section was large, exceeding that of Cardiff by 891, the total number of exhibits being 4,809.

There were but few actual novelties or implements representing new principles, but it was a very fine and interesting Show nevertheless.

Awards of Silver Medals.

There were some 73 entries for the Society's Silver Medals, and the Judges awarded five medals to the exhibits here named ·

No in Catalogue	Exhibitor	Nature of Award
596	Dairy Supply Co, Ltd., Museum St. London, W C	Recording Thermometer.
1095	A. C Bamlett, Ltd, Thirsk.	Potato Digger, "Bamlett."
2998	Bamfords, Ltd, Leighton Iron Works, Uttoxeter.	Oil Engine, "The Bamford."
3364	N. V. Machinefabriek "De Pol," Zutphen, Holland.	Threshing Machine.
3370 & 3372	Phipps & Son, Chippenham.	Self - lift Arrangement applied to Plough or Cultivator.

The following is a detailed description of these exhibits :—

No. 596. *Recording Thermometer.* Dairy Supply Company, Ltd, Museum Street, London, W.C.1.

This is an ingenious and useful instrument designed to record automatically on a revolving card dial the varying temperatures of any liquid or other substance with which the thermostatic bulb is placed in contact.

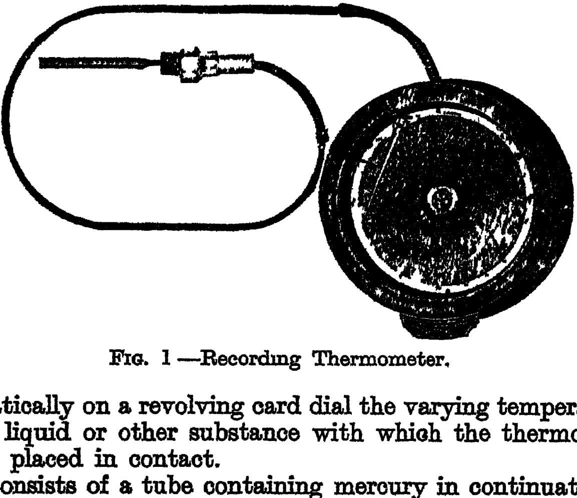

Fig. 1 —Recording Thermometer.

It consists of a tube containing mercury in continuation of which a flexible tube containing ether and ending in a fine tube and flat hollow metal coil to which is attached the recorder needle or pen arm.

The heating of the mercury causes heating and expansion of the ether and a slight uncoiling or coiling of the hollow coil. The dial revolves by clockwork.

No. 1095. *The "Bamlett" Potato Digger.* A. C. Bamlett, Ltd., Thirsk, Yorks.

This machine embodies distinct improvements on earlier designs. The tines are actuated by a parallel link motion, and are placed outside and in rear of the revolving links. They are protected from breakage or damage by a safety relief.

The main drive is by chain, and the speed can be altered by the insertion of a larger or smaller sprocket; a clutch is provided for putting the machine in or out of gear.

It is a good, compact and well-made machine, and when tested by the Judges did its work satisfactorily. Weight 7½ cwt. Price £32.

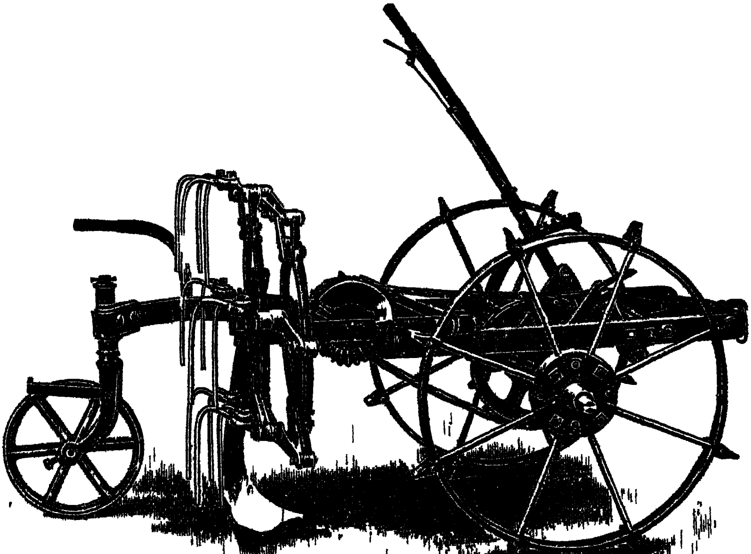

Fig. 2.—Potato Digger, "Bamlett."

No. 2998. *Oil Engine, "The Bamford."* Bamfords, Ltd., Leighton Iron Works, Uttoxeter.

This is a 5 h.p. engine. Starting with petrol, it runs on paraffin and is said to consume ·75 pints per h.p. per hour. The construction is of peculiar simplicity and of exceptional strength.

The big end bearings are of white metal and are interchangeable, easily replaced in a very few minutes.

The valves are large and there is a very excellent arrangement for taking them out; this, too, can be done in a matter of a few seconds

The Judges were impressed with the excellent design and simplicity of the engine.

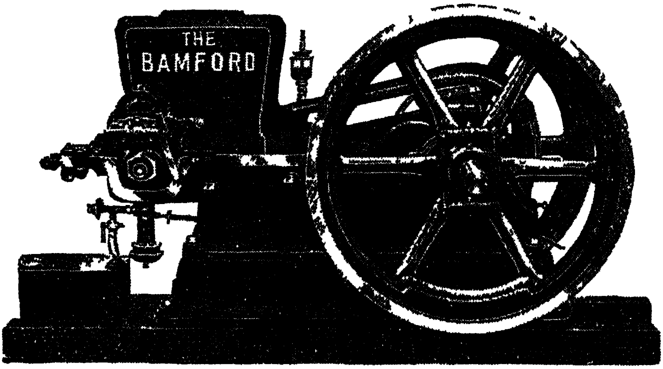

FIG. 3.—Oil Engine, "The Bamford"

No. 3364. *Threshing Machine.* N. V. Machinefabriek "De Pol," Zutphen, Holland.

This machine was exhibited at Cardiff and owing to its late arrival through unavoidable delay the Judges recommended that permission be granted for it to be entered again this year.

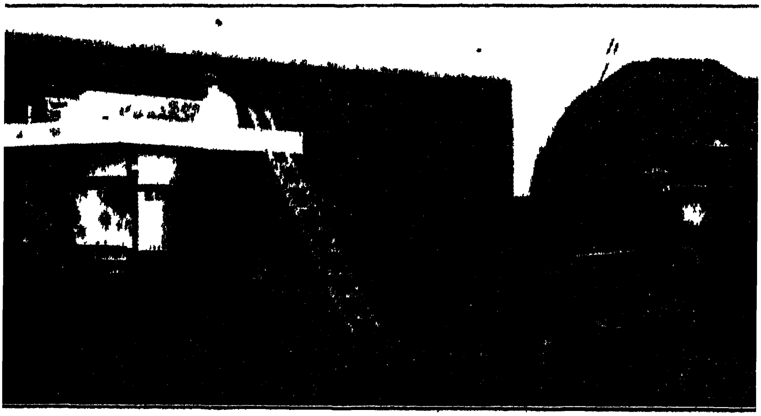

FIG 4.—Threshing Machine, "Leo."

The description of the machine given in last year's Report may be repeated:—

"This machine is of somewhat different type from those we are accustomed to see in this country, and for which is claimed 'simplicity' of design, few moving parts, small dimensions, low weight, high capacity and facility of transport.

"It has a 6 ft. 4 in. drum, but the machine is compact and smaller than other machines with shorter drums. Separation of the chaff is mainly effected by a fan driving air through a cylindrical trough in which the corn and chaff are energetically whirled up by a stirring shaft bearing arms and slanting blades, while a helical conveyor carries the grain in the opposite direction, delivering it to the riddles and awner, thence in two qualities to sacks."

The machine was put through a thorough trial in the fodder yard, where it threshed a quantity of wheat and also of oats. It was driven by a Saunderson Tractor, and its performance was excellent in every way.

It is a very compact and portable machine, notwithstanding that it has a large drum 6 ft. 4 in. in length and 18½ in. in diameter. Made in two sizes, it is claimed that the C or smaller machine requires an engine of 5 b.h.p., and the D or larger machine 6 b.h.p. The drum revolves at 1,200 revolutions per minute. The arrangement for the adjustment of the concaves is very convenient, each end being independent of the other.

The output claimed for the C machine is 25 to 40 bushels of oats per hour, and of the D machine 30 to 50 bushels of oats. The price, £250 for D and £200 for C, is a strong recommendation for a machine which is undoubtedly well and strongly made.

No. 3370. *Self-lift Arrangement applied to Plough or Cultivator.* Phipps & Son, Chippenham, Wilts.

After examining numerous self-lifting devices, the Judges came to the conclusion that while many others were excellent and showed much ingenuity in design, this had the all-important merit of simplicity in a marked degree both for raising, lowering and adjusting depth, being at the same time a strong well-made contrivance.

OTHER NEW IMPLEMENTS.

No. 268. "*Diabolo*" *Milk Cooler.* R. J. Fullwood & Bland, 31–35, Bevenden Street, Hoxton, London, N.1.

Stated capacity 30 gallons per hour. Price £10.

This cooler is designed to protect the milk from contact with the air while being cooled. It consists of an iron casing in which rest a nest of shallow saucer-shaped bowls so arranged that while water flows through the inner part of these bowls the milk flows over their outside surfaces.

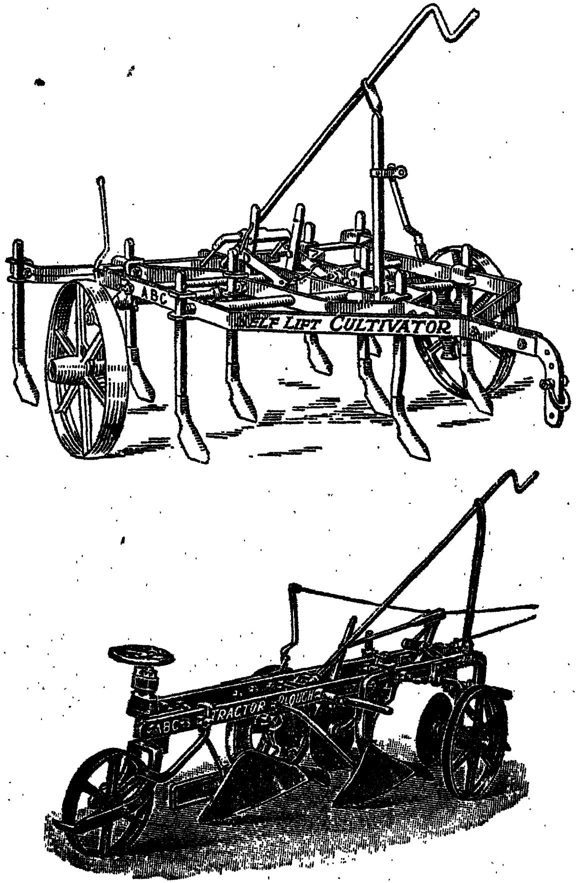

FIG. 5.—Self-lift Arrangement applied to Plough or Cultivator

The joints between the several elements are made by rubber rings brought into close contact by means of a screw. The whole is closed in and is surmounted by a receiving vessel for the milk and a filter.

The cooler was tested in the Dairy, and there was no difficulty in reducing the temperature of the milk to that of the cooling water, the actual temperature of the milk being 95° and that of the water 62°.

Notwithstanding the advantage of the milk being protected during cooling, the fact that a certain quantity remains in the cooler which has to be emptied out and taken to pieces every time it is used, together with the fact that the several parts take some little time to clean, will, we fear, somewhat outweigh the one important advantage it has over the ordinary and very simple corrugated cooler.

No. 538. *Cream Separator, "Princess."* Capacity 50 gallons, price £26 10*s*. Watson, Laidlaw & Co., Ltd., 98, Dundas Street (South), Glasgow.

This separator has two distinctive features—both of some practical merit. The first is in the flexible bearing for the spindle on which the separating bowl is hung. The bearing is formed of a double coil of stout Phosphor Bronze wire, possessing the necessary amount of flexibility and being lubricated by means of an oil-saturated felt pad; the coil is wound in the opposite direction to that in which the spindle rotates, thus minimising any possibility of seizing.

The other feature is that the separating plates each have three hollow studs projecting from their surfaces, by means of which all the plates are quickly and easily nested together in the hands and are placed over the central tube in one block without any special fitting on to the tube itself.

No. 597. *Temperature Controller.* Dairy Supply Co., Ltd., Museum Street, London, W.C.1.

This is another very useful automatic instrument working on the same principle as the Recording Thermometer above described.

In this case the flexible tube is connected to a metal capsule, which expands or contracts and in turn opens or closes a valve controlling a supply of compressed air from an independent source. This again actuates a diaphragm valve, thus opening or closing more or less a valve controlling a supply of a heating or cooling medium, *i.e.* of steam, brine or any heat-carrying or cooling liquid.

Thus any liquid, vapour or gas confined in a closed space can be kept at a uniform temperature.

No. 598. *"Alfa Laval" Combined Turbine Separator and Regenerative Pasteurizer. Capacity 220 gallons per hour.*

Though it presents nothing actually new, this is a very neat and compact plant.

No. 620. *Railway Milk Churn, with "Hygienic" pattern neck and cover, and self-locking fastener.* Price £4. T. Grayson, 16–17, Queen Street, Derby.

This churn has a plain and dustproof cover, and a small eccentric catch or fastener, which is a good improvement, but would be better if the catch could be replaced when worn by some more convenient means than unsoldering and soldering on a new one.

No. 655. *The "Revolt" Drain Excavator.* Price £50. South Lincolnshire Agricultural Engineering Co., Ltd., Spalding.

This is to all intents the same implement which was exhibited by a foreign firm in 1919 at Cardiff.

The Judges were invited to see the machine working in a field close to the Showyard.

It consists of a steel U-shaped cutter or share at the lower and forward end of an inclined conveyor.

An adjustable shoe in front of the cutter serves to regulate the thickness of the cut, which is 7 in. wide.

The elevator is driven by a combined cog and carrying-wheel which runs along the bottom of the drain.

The machine was drawn by a tractor and made very good work in a grass field with soft, moist and fairly tenacious soil. Cutting a trench to a uniform depth parallel with the surface of the ground is a simple matter, but to secure a uniform fall in the trench is not quite so easy, particularly if the surface of the ground be uneven. It struck the Judges as a rather crude way of meeting the difficulty for a man to be employed to stand on the machine and jump off whenever a hollow in the ground was met, so as to lighten the machine and reduce the depth of the cut.

Even if it were necessary, as undoubtedly it would be, to regulate the fall of the trench by the use of land tools, a vast amount of time would be saved in excavating the bulk of the trench by this mechanical means.

The machine is light and portable, yet apparently of ample strength, and the work it did was entirely satisfactory.

No. 671. *Ball Bearing Hub.* Skefko Ball Bearing Co., Ltd., Skefko Works, Luton, Beds.

The application of ball bearings to the wheels of farm wagons and other implements is a new departure, which, of course, greatly reduces the draught. Whether the additional cost, stated to be about £30 in the case of a farm wagon, can be shown to be a profitable investment remains to be proved.

No. 674. *Seed Dresser* (*Dossors Patents*) *new* "*Challenge Model.*" Price £95. F. M. Dossor, St. Catherine's Works, Doncaster.

This machine has certain notable improvements on earlier models by the same maker.

The sieves receive regular vertical vibrations, and also an occasional sudden bump vertically; numerous brushes, too, not only help to keep the sieves clean, but considerably assist in separating the more difficult seeds, which are not only shaken but made to continually jump off the surface of the sieves. It was unfortunate that owing to the difficulty of arranging for the machine to be substantially erected and driven, the exhibitor was not able to show this very interesting machine working.

No. 695. *Root Crop Thinner or Singler.* Harold William Davey, Maesmynan Hall, Afonwen, Flintshire.

This is a novel piece of mechanism consisting of a double helix of sheet steel mounted on a central longitudinal shaft, carried between and driven by the travelling wheels of the implement. Stops or cutters are fixed between the helices which, as the machine travels along a row of small root plants and the helix revolves, cut out gaps, the length of which can be varied by adjustment provided for the purpose.

No. 702. *Watson Bottom Dumping Wagon.* S. Thornely Mott & Vines, Ltd., 11, Old Queen Street, Westminster, London, S.W.1.

This is, in fact, a two-wheeled cart, the bottom of which is formed of a pair of doors so arranged that the driver can discharge his load by pressing down a foot lever and, if necessary, without stopping his horses.

Another movement of the lever closes up the bottom ready for reloading.

A very useful and convenient cart.

No. 703. *Aero Block Machine.*

This is a compact machine for making hollow concrete blocks for building.

No. 754. *Lime Washing Machine.* Cooper, Pegler & Co., Ltd., 24 and 26, Christopher Street, Finsbury Square, London, E.C.2. (Manufactured by the Etablissements Vermorel, Villefranche, Rhone, France.)

This machine has a strong diaphragm pump and a good agitator with an air container giving a constant pressure and a steady spray; it is conveniently portable. The barrel can be readily detached from the shafts and carried by its side handles. Capacity, 6½ gallons. Weight 33 lb. Price £11.

No. 959. *Tractor Cultivator.* T. Collings, Bacton, Norfolk.

This cultivator has a self-lift actuated by a clutch on the axle; the clutch is of simple construction with a roller to save wear.

The depth regulator can be adjusted whilst in motion.

No. 1017. *Artificial Manure Distributor.* F. Walker & Sons, Drill Works, Bingham, Notts.

There is nothing original in the way in which the machine works, but it possesses an unusual and very desirable feature in that it can be dismantled in a remarkably short space of time, and that very conveniently, so that it is easily kept clean.

The machine was tested before the Judges with superphosphate and did its work satisfactorily.

No. 1025. *Turning Stetch-land Plough, 8 furrow, with steel Tyne skifes and mould boards; shares, sleds and knife coulters arranged for cutting at one time four right-hand and four left-hand* *furrows, say 9 in. wide.* John Fowler & Co. (Leeds), Ltd., Steam Plough and Locomotive Works, Leeds.

This is a fine implement with every desirable adjustment, well suited for the special purpose for which it is designed. Price £575.

No. 1479. *Trailer Car Hi-Speed.* Butler & Wilson, Ltd., 18–20, Hampstead Road, London, N.W.1.

Manufactured by Northway Hi-Speed Trailer Car Co., East Rochester, U.S.A.

This is a very useful four-wheel pneumatic-tyred vehicle which is self-steering, and can be attached to any make of motor car. Carries 17½ cwt. Weight 730 lb. Price £98 17*s.* 6*d.*

No. 1510. *Tractor Disc Plough.* The New Trafford Engineering Co., Ltd., 65, Conduit Street, London, W.1.

Manufactured by the Oliver Chilled PlowWorks, Indiana, U.S.A.

This is a very good three disc self-lift tractor plough with exceptionally large discs.

No. 2094. *Combined Swath Turner, Tedder and Side Rake.* Blackstone & Co., Ltd., Rutland Engineering Works, Stamford.

This is the same implement as was exhibited and received a Silver Medal at Cardiff, but has been further improved. There are universal joints on the driving shafts of the swath turner, and the axle does not need to be expanded—it is 1 cwt. less in weight, and the price £26 5*s.*

No. 2136. *Self-lift Tractor Cultivator.* James & Frederick Howard, Ltd., Britannia Iron Works, Bedford.

A good implement with an original form of cam gear for self-lift and lowering. Price £50.

No. 2596. *Combined Side Delivery Rake, Swath Turner, Tedder and Windrower.* Martin's Cultivator Co., Ltd., Lincolnshire Iron Works, Stamford, Lincolnshire.

The feature of the implement is the ease and rapidity with which being (1) a swath turner it can be converted into (2) a side delivery rake and (3) into a tedder and windrower. Price £35 15*s.*

No. 2597. *Combined Side Delivery Rake and Swath Turner.*

A new design, the same in effect as 1 and 2 combined of No. 2596. Price £34 17*s.* 6*d.*

No. 2598. *Tractor Cultivator and Ridger, Martin's New Patent Self-lift Special.*

The self-lift is actuated by a chain and simple cam in a box.

A slot about 3 inches long in a connecting rod or link allows the tines some little latitude in lifting over stones, &c., and so prevents the wheels lifting at the same time, and so delaying action of lifter.

No. 2599. *Tractor Plough, Martin's New Patent Self-lift.*

The self-lift is driven off the furrow wheel—can be used for two or three furrows as desired.

No. 2750. *An Electric Light and Power Plant.* Manufactured by Alamo Farm Light Co., Alamo Electric, Ltd., 36, Grosvenor Gardens, London, S.W.1.

This consists of a rotating sleeve valve engine and dynamo mounted on a common base plate with radiator and switchboard. The engine is automatically stopped if water or oil are too low, and when batteries are charged. The throttle valve is also automatically closed by a solonoid if the engine should race, due to the taking off of load. Price £170.

No. 2751. *Cultivator, Self-lifting for Tractor or Horse Power.* McBain Brothers, Ltd., Castle Engineering Works, Tweedmouth, Berwick-on-Tweed.

A feature of the implement is that the pull of the tractor takes on below the axle of the wheels, and thus keeps the tines down in the ground. The tines are made to fold right back to prevent damage on meeting a rock.

No. 2757. *Grubber, with Automatic Lift for Tractor Work.* The Saunderson Tractor and Implement Co., Ltd., Elstow Engineering Works, Bedford.

A strong, well-made implement, with a well-designed self-lifting arrangement.

No. 2758. *Plough with Self-lift for Tractor and convertible for 2, 3 or 4 Furrow Work.*

The self-lift mechanism is somewhat different from that on the grubber, but is also cleverly worked out, and the plough itself is a good well-made implement.

No. 2907. *Water Elevator, Chaine Helice Patent, Hand and Power Driven.* Boulton & Paul, Ltd., Norwich.

In the words of the makers this is " An ingenious invention simple and practical." It consists of an endless ordinary wrought iron chain, surrounded by a double galvanised wire helix; the chain hangs in the well or other receptacle for the fluid which it is desired to raise, and a wheel-shaped counterweight rests in the loop of the chain to keep it steady. The upper loop of the chain hangs over a pulley covered in by an iron case with a spout. On the pulley being revolved by hand or mechanical power the ascending side of the chain and helix travels up full of water which, owing to the combined effect of the forces of capillary attraction, friction and impetus, travels in the chain until it is thrown out by centrifugal force as the chain passes over the upper pulley.

The elevator is applicable for raising not only water but sludge, oil or other liquids.

No. 3329. *Three-furrow Tractor Plough, patent Self-lift.* E. and H. Roberts, Ltd., Deanshanger Ironworks, Stony Stratford, Bucks.

Adjustable from 7 to 13 in. in width of furrow, this is a strong, well-made plough, with convenient and ample adjustments, though perhaps rather complicated.

No. 3365. *Grinding Machine for Mower Knives.* N. V. Machinefabriek "De Pol," Zutphen, Holland.

A very useful and handy grindstone, mounted on an iron stand with water trough. There is a carrier to which the knives are clamped and which rocks up and down as the stone is revolved, thus automatically grinding the full length of the blades equally. Only one man is required to work it.

Nos. 3370, 3371 and 3372. *Tractor Plough (2-furrow), Tractor Skim or Paring Plough, and Tractor Self-lift Cultivator.* Phipps & Son, Art Ironworks, Chippenham, Wilts.

These implements have already been referred to, and a Silver Medal is awarded to the self-lift arrangement.

The three implements are all one-man outfits operated by a cord from the tractor driver's seat. Having ample adjustments which are readily made, the machines have much to commend them in sound construction and simplicity.

No. 3595. *Grist Mill, The "Seamac."* South of England Agricultural Machinery Co., Ltd., 4, King Street, Cheapside, London, E.C.2. and Barden Road, Tonbridge.

This is a handy little mill, suitable for stock, poultry and domestic use, requires $1\frac{1}{2}$ h.p., or can be used by hand.

The two "unbreakable" steel plates which take all the wear can be replaced for 8*s.* 6*d.*

No. 3596. *Pulley, The "Seamac" Patent.*

This is an adjustable pulley with an independent split boss easily fixed to any shaft from $1\frac{3}{16}$ to 3 in. diameter.

No. 3740. *Ensilage or Straw Cutter and Blower, Massey Harris' "Blizzard."* Massey-Harris, Ltd., 53–55, Bunhill Row, London, E.C.1.

This is a large and powerful blower on to the disc of which are attached the knives for cutting the ensilage or chaff. Stated to cut and elevate to silo 12 to 15 tons of ensilage per hour, and to require 12 to 15 h.p. for ensilage, and 10 h.p. for chaff.

No. 3913. *Plough, The "Pidsea."* Manufactured by The Holderness Plough Co., Ltd., Burton Pidsea, Hull; Engineering Depôts, Ltd., Market Street, York.

This is a plough specially designed to follow automatically the shape of the land, and to give even depth of furrow. Especially applicable to ridge-and-furrow land.

No. 3943. *Pump, Feuerheerd.* Feuerheerd's Rotors (British Empire) Ltd., New Bridge Street House, 31, New Bridge Street, London, E.C.

A full description of the pump was given in last year's Report. It was unfortunate that as this very ingenious and efficient pump was exhibited last year it was not eligible for the award of a Silver Medal on this occasion.

Nos. 3969 and 3970. *Tipping Wagons, "Vulcan."* The Vulcan Motor and Engineering Co. (1906) Ltd., Crossens, Southport, Lancashire.

These are powerful motor wagons, 20 h.p., with driver's canopy and cab, 30 cwt. chassis, and fitted with Bromilow & Edwards' hydraulic tipping gear, a simple and convenient means of tipping the wagon.

No. 4000. *Oil Motor Windlasses, McLaren's Patent.* J. & H. McLaren, Ltd., Midland Engine Works, Leeds.

These are internal combustion engines for ploughing on the cable system.

Works a 4-furrow plough, and has about ⅓ in. the power of the large steam ploughing engines; they weigh 3 tons each. The engines are 4-cylinder Dorman, 32 h.p., starting on petrol and running on paraffin.

Price of complete set with plough and cultivator, £2,636.

No. 4016. *Motor Tipping Wagon, 4 tons.* Walker Brothers (Wigan), Ltd., Pagefield Ironworks, Wigan, Lancashire.

A 40 h.p. motor wagon, fitted with Pagefield patent tipping gear. This is a powerful screw device actuated by the engine and operated by the driver alone.

No. 4024. *Cultivator, Self-lift, for Motor Traction.* W. N. Nicholson & Sons, Ltd., Trent Iron Works, Newark-on-Trent.

This implement has a neat and simple means of lifting and lowering which can be fitted to the makers' standard machines of several years past.

No. 4025. *Cultivator, Self-lift for Horse Draught.*

A very similar implement to the above, with neat mechanism; both wheels can be set for different depths.

No. 4510. *Silo, Creosoted Stave Norfolk.* Jewson & Sons, Ltd., Norwich.

This firm exhibited a fine cylindrical silo of creosoted timber construction. Conveniently arranged for filling and emptying, together with a cutter and blower, the "Monarch," mounted on a steel truck.

No. 4599. *Concrete Block Machinery, the "Manelite."* Charles James Mannell, Petra Place, Poole Hill, Bournemouth West, Hants.

This is a compact and convenient machine which can be easily worked by either hydraulic or hand power.

The sides of the box are movable, and the bottom pieces are changeable, so that blocks of different sizes and shapes can be made.

No. 4623 to 4628. *Concrete Block-making Machines.* Winget, Ltd., 24, Grosvenor Gardens, Westminster, S.W.1.

This exhibit comprised several excellent machines for making blocks, roofing tiles, pipes, &c., or for contingent purposes. The chain-spade mixer has a hopper to hold three cubic ft.; it is filled with the aggregate, and a shovel (of given capacity) full of cement is added; it is mixed first dry and then wet within one minute.

No. 4802. *Legging* (*Poethlyn*). Edward Penton & Son, 1–11, Mortimer Street, London, W.1.

An unusual entry as an agricultural implement! This legging appears, nevertheless, to be of excellent design.

Made in pigskin, or other leather or box cloth or canvas, the wide band which wraps round the ankle adds greatly to the waterproof qualities of the legging, which is at the same time very neat and smart.

MISCELLANEOUS EXHIBITS.

No. 4633. *Concrete.* Concrete Utilities Bureau, 35, Great St. Helens, London, E.C.3.

As at Cardiff this Company had a very fine and interesting exhibit where the process of concrete block making and the erections of concrete structures could be seen in progress.

A convenient arrangement, too, was the grouping of all other exhibits of machinery for concrete mixing, block making, &c., around the large structure of the Concrete Utilities Bureau, whereby the study of the several machines and the collecting of information was greatly facilitated.

No. 4806. *Liquids Lift or Chain Pump.* Liquids Lifts, Ltd., 47, Victoria Street, London, S.W.1.

This is another pump of the endless chain variety, but in this case the chain is composed of short lengths of helical wire joined together horizontally by rods which pass through the coils of adjoining sections. It can be worked by hand or any mechanical power, and is said to be capable of being applied to the lifting of large quantities of water or other liquids to great heights, as well as for so small a matter as the bailing out of a rowing boat.

In conclusion it may again be stated that there were numerous other very fine exhibits of great interest which it is beyond the scope of the Report to allude to in detail.

The Judges desire once more to record their thanks to the Stewards of Implements, the Hon. J. E. Cross and Mr. U. Roland Burke, for all they did to facilitate their work, and also to the Society's Consulting Engineer, Mr. F. S. Courtney, for the generous and invaluable help constantly placed at their disposal.

WALTER L. BOURKE.

Monycrower,
Maidenhead.

REPORT OF THE STEWARD OF DAIRYING, DARLINGTON SHOW, 1920.

MILK YIELD TRIALS (CATTLE, CLASSES 241 to 253.)

OUT of a total entry of 156 cows, 118 competed in these trials, this being the largest number of cattle entered and tested in any previous Show of the Society.

It is satisfactory to be able to record the fact that only two animals were disqualified for giving milk showing less than 3 per cent. fat on the average of the two milkings, although if the fat percentage had been taken on each milking 27 cows would have been ruled out.

The points on which the awards were made were the same as at the Cardiff Show.

The three Champion Prizes generously given by a Society interested in the production of milk were awarded as follows :—

A.—*For Cows of the Dairy Shorthorn, Lincolnshire Red Shorthorn, Devon, South Devon, Longhorn, Red Poll and British Friesian breeds.*

Champion Prize, 30*l*.—1002 J. M. Strickland's Dairy Shorthorn, **Keyingham Dairy Maid 5th.**

Reserve Number, 5*l*.—1588 W. Grainger's British Friesian, **Eske Violet.**

B.—*For Cows of the Ayrshire, Jersey and Guernsey breeds.*

Champion Prize, 20*l*.—1673 W. M. Cazalet's Jersey, **Fairlawne Hussy.**

Reserve Number, 5*l*.—1511 W. Gibson's Ayrshire, **Moorside Acacia.**

C.—*For Cows of the Kerry and Dexter breeds.*

Champion Prize, 10*l*.—1814 Capt. Nelson Zambra's Kerry, **Minley Mistress.**

Reserve Number, 5*l*.—1847 A. C. King's Dexter, **La Mancha Madeline.**

Table I. gives the full particulars and details of the trials, with the prizes won in each class.

TABLE I.—MILK-YIELD CLASSES AT DARLINGTON, 1920.

No. in Catalogue	Exhibitor	Name of cow	Date of birth	Date of last calf	No. of days in milk	Date of last Service	Total milk yield in 24 hours		Average Fat percentage	Points				Awards
										Milk	Fat per cent. × 4	Lactation	Total	
Class 241		*Shorthorns*		1920			Lb.	oz.						
986	Major G. J. Buxton	Castel Maid	Apr. 7, 1911	June 13	18	—	57	2	4·45	57·12	17·80	Nil	74·92	H.C.
990	G. Harrison	Lady Peel 2nd	Mar. 20, 1911	May 7	55	—	47	8	3·95	47·50	15·80	1·50	64·80	H.C.
992	R. W. Hobbs & Sons	Lemhill 32nd	Nov. 4, 1912	Apr. 23	69	—	37	8	3·47	37·50	13·88	2·90	54·28	—
996	R. L. Mond	Crudwell Milky Walton	Nov. 25, 1912	Mar. 11	112	—	53	6	3·47	53·37	13·88	5·00	72·25	H.C.
997	D. E. Campbell Muir	Marchioness of Barrington 3rd	Aug. 17, 1909	May 10	52	June 1, 1920	55	12	3·17	55·75	12·68	1·20	69·63	H.C.
998	Olympia Agricultural Co., Ltd.	Bright Aster	Jan. 16, 1910	May 31	31	—	58	12	4·40	58·75	17·60	Nil	66·35	H.C.
1001	C. & E. Stephenson, Ltd.	Rosannah 6th	Dec. 10, 1911	May 18	44	—	65	14	3·85	65·87	15·40	·40	81·67	2nd Prize.
1002	J. M. Strickland	Keyingham Dairy Maid 5th	Jan. 2, 1913	June 8	23	—	67	10	4·37	67·62	17·48	Nil	85·10	1st Prize & Champion
1005	The Duke of Westminster	Bare Charm	Nov. 20, 1913	June 9	22	—	63	6	3·35	63·37	13·40	Nil	76·77	R.N.
1006	The Duke of Westminster	Cressida 47th	Apr. 6, 1912	May 22	40	—	54	12	3·97	54·75	15·88	Nil	70·63	H.C.
1008	The Duke of Westminster	Marjorie Grey	May 12, 1912	May 29	33	—	56	6	3·52	56·37	14·08	Nil	70·45	H.C.
1009	John A. Willis	Carlton Queen 7th	Apr. 15, 1912	June 6	25	—	63	4	4·32	63·25	17·28	Nil	80·53	3rd Prize.
1010	Capt. A. S. Wills	Duchess of Cranford 3rd	Oct. 28, 1908	June 3	28	—	59	14	4·02	59·87	16·08	Nil	75·95	H.C.
1013	H. A. Brown	Johnby Rose 18th	Sept. 2, 1914	May 23	39	—	55	0	4·17	55·00	16·68	Nil	71·68	H.C.
1014	E. Ezra	Roseleaf 2nd	May 7, 1915	May 27	35	—	38	12	4·47	38·75	17·88	Nil	56·63	—
1018	R. W. Hobbs & Sons	Rose 61st	May 25, 1915	May 25	37	—	32	4	4·77	32·25	19·08	Nil	51·33	—
1019	W. G. Millar	Cockerham Purity	Feb. 16, 1914	Apr. 23	69	—	47	4	3·90	47·25	15·60	2·90	65·75	H.C.
1020	J. Moffat	Watercrook Cress 2nd	July 15, 1915	June 11	20	—	47	0	4·12	47·00	16·48	Nil	63·48	H.C.
1024	F. H. Thornton	Fairy Duchess 18th	Nov. 14, 1914	May 23	39	—	50	0	4·80	50·00	19·20	Nil	69·20	H.C.
1026	Capt. A. S. Wills	Thornby Cranford 2nd	June 2 1915	May 24	38	—	52	0	3·80	52·00	15·20	Nil	67·20	H.C.
1027	Capt. A. S. Wills	Thornby Foggathorpe 2nd	Sept. 11, 1914	May 14	48	—	47	10	3·77	47·62	15·08	·80	63·50	H.C.
1029	Capt. H. Fitzherbert Wright	Yeldersley Red Rose 4th	Oct. 21, 1914	June 14	17	—	47	12	3·90	47·75	15·60	Nil	63·35	H.C.
1038	Chivers & Sons, Ltd.	River Meadow Pippit 4th	July 16, 1916	May 10	52	—	50	0	3·37	50·00	13·48	1·20	64·68	H.C.
1039	The Earl of Derby	Knowsley Waterloo Gift	Oct. 20, 1916	June 8	23	—	39	12	4·45	39·75	17·80	Nil	57·55	H.C.
1044	R. W. Hobbs & Sons	Sybil 26th	Feb. 23, 1916	May 6	56	—	38	14	4·20	38·87	16·80	1·60	57·27	H.C.
1045	W. G. Millar	Grace Darling	Aug. 3, 1916	Apr. 25	67	—	51	8	3·25	51·50	13·00	2·70	67·20	H.C.
1048	Alfred Palmer	Orange 51st	Sept. 22, 1916	May 4	58	—	45	6	4·60	45·37	18·40	1·80	65·57	H.C.
1049	F. H. S. Perkins	Hadnock Charming Lass 16th	Oct. 3, 1916	June 6	25	—	51	0	3·72	51·00	14·88	Nil	65·88	H.C.
1054	F. H. Thornton	White Rose	July 18, 1916	May 24	38	—	48	14	3·45	48·87	13·80	Nil	62·67	H.C.
Class 243		*Lincoln Red Shorthorns*												
1112	John Evens & Son	Burton Cherry 3rd	Oct. 6, 1914	May 4	58	—	57	12	3·77	57·75	15·08	1·80	74·63	3rd Prize.
1116	Col. J. Gretton, M.P.	Burton Cork 15th	Apr. 14, 1913	May 19	43	—	44	0	3·10	44·00	12·40	·30	56·70	—

TABLE I.—MILK-YIELD CLASSES AT DARLINGTON, 1920—*continued.*

No. in Catalogue	Exhibitor	Name of cow	Date of birth	Date of last calf	No. of days in milk	Date of last Service	Total milk yield in 24 hours		Average Fat percentage	Points				Awards
										Milk	Fat per cent. × 4	Lactation	Total	
Class 243		*Lincoln Red Shorthorns—cont.*		1920			Lb.	oz.						
1117	Col. J. Gretton, M.P.	Kerdiston Phoebe 10th	Jan. 26, 1916	May 31	31	—	65	0	3·82	65·00	15·28	Nil	80·28	2nd Prize.
1120	A. Barber	Retford Dairymaid	May 3, 1914	Apr. 12	80	June 21, 1920	53	14	3·45	53·87	13·80	4·00	71·67	H.C.
1122	S. Blundell	Bendish Marcia 2nd.	Aug. 27, 1914	May 26	36	—	58	0	3·50	58·00	14·00	Nil	72·00	R.N.
1123	S. Blundell	Bendish Molly	June 11, 1911	May 27	35	—	56	4	3·30	56·25	13·20	Nil	69·45	H.C.
1124	S. Blundell	Bendish Princess 2nd	Aug 10, 1914	May 7	55	—	57	12	3·17	57·75	12·68	1·50	71·93	H.C.
1125	John Evens & Son	Burton No. 44	May, 1914	May 14	48	—	49	4	3·67	49·25	14·68	·80	64·73	H.C.
1126	John Evens & Son	Burton Fillpail	Jan. 31, 1912	May 27	35	—	50	2	3·97	50·12	15·88	Nil	66·00	H.C.
1127	John Evens & Son	Burton Fillingham	Apr. 20, 1915	May 21	41	—	68	4	3·92	68·25	15·68	·10	84·03	1st Prize.
1130	Lt.-Col. Sir A. G. Weigall	Anderby Kirkham	March, 1911	June 4	27	—	72	4	2·80	72·25	11·20	Nil	83·45	Fat below Standard.
1131	Lt.-Col. Sir A. G. Weigall	Burton Countess	March, 1914	May 21	41	—	39	8	3·55	39·50	15·40	·10	55·00	—
1132	A. Barber	Retford Quality 2nd	Sept. 4, 1917	May 18	44	—	28	0	5·77	28·00	23·08	·40	51·48	—
Class 244		*Devons*												
1251	W. G. Busk	Suffragette 1st	Feb. 1, 1913	Mar. 27	35	—	47	2	4·25	47·12	17·00	Nil	64·12	2nd Prize.
1252	W. G. Busk	Wraxall Fancy	1909	May 17	45	—	54	2	4·02	54·12	16·08	·50	70·70	1st Prize.
1254	John H. Chick	Wynford Floss	Oct. 8, 1914	Mar. 8	115	—	30	6	4·82	30·37	19·28	5·00	55·65	—
1255	John H. Chick	Wynford Pill	July 23, 1913	May 21	41	—	45	2	4·47	45·12	17·88	·10	63·10	3rd Prize.
1256	Wm. D. Chick	Compton Cobble	Mar. 13, 1914	May 21	41	—	33	2	3·62	33·12	14·48	·10	47·70	—
1257	Wm. D. Chick	Compton Glitter 3rd	Dec. 13, 1914	Apr. 18	74	June 15, 1920	32	8	4·30	32·50	17·20	3·40	53·10	—
1258	R. A. Clarke & Sons	Lady 1st	Feb. 27, 1913	Apr. 22	70	June 16, 1920	43	8	3·87	43·50	15·48	3·00	61·98	R.N.
1259	R. A. Clarke & Sons	Maud Royal	May 27, 1911	June 6	25	—	44	10	3·37	44·62	13·48	Nil	58·10	H.C.
1261	A. T. Loram	Octroi	Mar. 8, 1914	May 14	48	—	33	8	3·47	33·50	13·88	·80	48·18	—
Class 245		*South Devons*												
1281	John Coaker	Primrose	Apr. 12, 1911	Jan. 16	167	Apr. 2, 1920	50	6	4·37	50·37	17·48	12·00	79·85	1st Prize.
1283	James Ismay	Countess 6th	Jan. 1, 1915	June 1	30	—	49	6	4·10	49·37	16·40	Nil	65·77	2nd Prize.
Class 246		*Longhorns*												
1301	W. Hanson Sale	Arden Cinderella	June 17, 1916	May 10	52	—	47	6	4·17	47·37	16·68	1·20	65·25	1st Prize.
1302	W. Hanson Sale	Grace 15th	July 4, 1915	June 25	6	—	38	4	4·30	38·25	17·20	Nil	55·45	2nd Prize.
1304	J. W. Swinnerton Weston	Arbury Rosebud	Apr. 21, 1915	June 8	23	—	34	14	5·12	34·87	20·48	Nil	55·35	—
Class 247		*Red Polls*												
1382	Lt.-Col. R. C. Batt	Letton Mavis 3rd	June 14, 1912	Mar. 8	115	Apr. 28, 1920	29	8	3·80	29·50	15·20	7·50	52·20	—
1384	Capt. H. Colmore	Dallinghoo Ruby 1st	Oct. 28, 1913	May 28	34	—	54	4	—	54·25	-	Nil	—	Disqualified. Milk not sampled in evening.
1385	Capt. H. Colmore	Rendlesham Gentlewoman 2nd	Oct. 16, 1913	Feb. 5	147	June 16, 1920	25	4	3·80	25·25	15·20	4·00	44·45	—

TABLE I.—MILK-YIELD CLASSES AT DARLINGTON, 1920—*continued.*

No. in Catalogue	Exhibitor	Name of cow	Date of birth	Date of last calf	No. of days in milk	Date of last Service	Total milk yield in 24 hours		Average Fat per centage	Points				Awards
							Lb.	oz.		Milk	Fat per cent × 4	Lactation	Total	
Class 247		*Red Polls—continued*		1920										
1389	The Marchioness of Graham	Gressenhall Rosa	Dec. 21, 1914	May 21	41	—	47	4	4·25	47·25	17·00	·10	64·35	3rd Prize.
1390	Lord Hastings	Melton May	Sept. 30, 1914	Apr. 24	68	June 14, 1920	38	8	4·20	38·50	16·80	2·80	58·10	H C.
1391	Major J. A. Morrison	Kettleburgh Rosie 2nd	Nov. 30, 1913	Apr. 22	70	—	47	12	3·32	47·75	13·28	3·00	64·03	R N.
1393	Capt. A. Richardson	Kettleburgh Rosie 4th A1	Apr. 26, 1912	June 3	28	—	60	8	3·40	60·50	13·60	Nil	74·10	1st Prize.
1394	Capt. A. Richardson	Stowupland Columbyne	July 18, 1915	Apr. 9	83	May 1, 1920	46	4	3·77	46·25	15·08	4·30	65·63	2nd Prize.
1396	Joseph Watson	Gressenhall Molly	July 7, 1912	Dec. 10, '19	204	May 23, 1920	44	8	3·62	44·50	11·48	Nil	58·98	H C.
Class 248		*Ayrshires*												
1541	Wm. Gibson	Moorside Acacia	Apr. 23, 1912	May 13	49	—	56	12	4·35	56·75	17·40	·90	75·05	1st Prize and Reserve for Champion.
1542	Wm. Gibson	Moorside Atalanta 3rd	Aug. 3, 1914	May 21	41	—	50	12	4·42	50·75	17·68	·10	68·53	2nd Prize
1548	W. Murray	Kirkland Red Rose 4th	Nov. 12, 1913	June 4	27	—	41	0	3·75	41·00	15·00	Nil	56·00	—
Class 249		*British Friesians*												
1583	A. & J. Brown	Hedge's Dutch Stately	Nov. 25, 1916	Jan. 16	167	May 26, 1920	46	8	3·70	46·50	14·80	4·00	65·30	H C.
1584	A. & J. Brown	Hedge's Friesland Queen	Nov. 13, 1913	June 8	23	—	60	0	3·35	60·00	13·40	Nil	73·40	3rd Prize
1585	A. & J. Brown	Hedge's Gracious Dutch	July 3, 1916	June 11	20	—	53	4	3·20	53·25	12·80	Nil	66·05	H C.
1587	Eaton & Muggeridge	Kirkhill Lucy 2nd	Feb. 25, 1916	May 31	31	—	46	0	3·87	46·00	15·48	Nil	61·48	H.C.
1588	Walter Grainger	Eske Violet	Mar. 1, 1914	May 31	31	—	68	12	3·90	68·75	15·60	Nil	84·35	1st Prize and Reserve for Champion.
1591	Olympia Agricultural Co., Ltd.	Colton Royal Rita	Apr. 7, 1912	May 10	52	—	67	4	2·92	67·25	11·68	1·20	80·13	Fat below Standard
1594	W. & R. Wallace.	Dorney Billah	Feb. 13, 1915	June 6	25	—	65	8	4·15	65·50	16·60	Nil	82·10	2nd Prize.
1602	The Duke of Marlborough	Haydon Beauty	Oct. 17, 1917	June 16	15	—	36	4	3·22	36·25	12·88	Nil	49·13	—
1604	James Russel	Tredegar Thistle 2nd	May 5, 1917	Mar. 20	103	June 14, 1920	33	0	3·20	33·00	12·80	6·30	52·10	—
1607	W. & R. Wallace.	Knebworth Countess	June 23, 1917	Jan. 16	167	Apr. 6, 1920	34	0	3·85	34·00	15·40	12·00	61·40	H C.
1608	A. Weightman	Pomona Audrey	Nov. 7, 1917	Apr. 26	66	—	53	4	3·35	53·25	13·40	2·60	69·25	R N.
Class 250		*Jerseys*												
1668	Capt. C. B. Balfour	Blue Lily	Nov. 29, 1911	Oct. 27, '19	248	Mar. 4, 1920	25	0	4·75	25·00	19·00	4·00	48·00	—
1669	Capt. C. B. Balfour	Moona	Feb. 24, 1914	Mar. 15	108	June 13, 1920	43	8	5·62	43·50	22·48	6·80	72·78	3rd Prize.
1673	W. M. Cazalet	Fairlawne Hussy	Aug. 8, 1916	Feb. 19	133	May 3, 1920	50	4	5·22	50·25	20·58	9·30	80·43	1st Prize & Champion
1674	Mrs. Evelyn	Dairymaid	June 1, 1912	Mar. 29	94	June 19, 1920	39	12	4·87	39·75	19·48	5·40	64·63	H.C.
1679	Mrs. McIntosh	Sweet Rose.	Aug. 25, 1912	May 9	53	—	33	12	4·92	33·75	19·68	1·30	54·73	—
1683	Major The Hon. H. Pearson	Plymouth Lady	May 31, 1916	Apr. 25	67	—	46	0	4·85	46·00	19·40	2·70	68·10	H.C.
1685	C. F. Rowntree	Blackberry.	Apr. 13, 1912	June 9	22	—	39	4	5·67	39·25	22·68	Nil	61·93	H C.
1688	Mrs. Rudd	Meadow Vale Pride.	Apr. 1, 1913	Mar. 24	99	—	44	12	4·68	44·75	18·72	5·00	68·47	H.C.
1689	R. Bruce Ward	Ida	Mar. 15, 1914	Feb. 4	148	May 12, 1920	47	0	4·80	47·00	19·20	8·00	74·20	2nd Prize.

TABLE I.—MILK-YIELD CLASSES AT DARLINGTON, 1920—*continued.*

No. in Catalogue	Exhibitor	Name of cow	Date of birth	Date of last calf	No of days in milk	Date of last service	Total milk yield in 24 hours Lb.	Total milk yield in 24 hours oz.	Average Fat percentage	Points Milk	Points Fat per cent × 4	Points Lactation	Points Total	Awards
Class 250		*Jerseys—continued*		1920										
1690	R. Bruce Ward	Restful 2nd	July 9, 1911	May 10	52	—	35	8	3·85	35·50	15·40	1·20	52·10	—
1691	Dr. H. Watney	Aurelius Time	Nov. 22, 1912	Jan 8	175	Mar. 12, 1920	34	0	4·92	34·00	19·68	12·00	65·68	H C.
1692	Dr. H. Watney	Lucy Blackberry	Nov. 19, 1910	Mar. 27	96	June 19, 1920	42	12	4·97	42·75	19·88	5·60	68·23	H C.
1693	Dr H. Watney	Sabina's Goose 2nd	Dec. 29, 1913	Apr. 8	84	June 14, 1920	43	8	5·47	43·50	21·88	4·40	69·78	R.N.
1634	Dr. H Watney	Sabina's Maple	Oct 10, 1912	Apr. 4	88	June 20, 1920	37	4	5·40	37·25	21·60	4·80	63·65	H.C.
1695	Mrs Edgar Watts	Duckwing	Aug. 30, 1910	Apr. 29	63	—	44	0	5·20	44·00	20·80	2·30	67·10	H C.
1706	J. H. N. Roberts	Quaintness	Apr. 4, 1917	Apr. 19	73	—	30	12	4·35	30·75	17·40	3·30	51·45	—
1708	R. Bruce Ward	Caper	Jan. 24, 1917	Apr. 3	89	June 20, 1920	44	8	3·65	44·50	14·60	4·90	64·00	H.C.
Class 251		*Guernseys*												
1766	James W. Fell	Govern's Dairymaid	Jan. 18, 1913	Feb. 23	129	—	37	12	5·97	37·75	23·88	2·00	63·63	R N.
1767	G F. Ferrand	Fussey's Dora	July 21 1912	Mar. 5	118	May 20, 1920	38	4	3·80	38·25	15·20	7·80	61·25	H.C.
1769	Miss C. E Hambro	Turn Out	Mar. 28, 1914	Apr. 28	64	June 13, 1920	37	0	4·07	37·00	16·28	2·40	55·68	—
1770	Mrs. Jervoise	Fanny du Foulon 22nd	July 3, 1911	May 16	46	—	46	0	4·10	46·00	16·40	·60	63·00	H.C.
1771	Mrs. W. Howard Palmer	Donata 7th of Warren Wood	Jan. 21, 1913	May 14	48	—	40	4	5·72	40·25	22·88	·80	63·93	2nd Prize.
1773	Mrs. Pratt Barlow	Blue Bell of Goodnestone	Apr. 9, 1914	May 8	54	—	30	0	3·90	30·00	15·60	1·40	47·00	—
1775	H.R.H, The Duchess of Albany	Bosistow Golden Heart	Feb. 23, 1916	June 5	26	—	49	5	3·87	49·31	15·48	Nil	64·98	1st Prize.
1776	H.R.H. The Duchess of Albany	Bosistow Victoria	Mar. 20, 1916	Mar. 30	93	June 18, 1920	40	4	4·53	40·25	18·12	5·30	63·67	3rd Prize.
1783	G. Percy Sanday	Lisle's Mousette 9th	June 27, 1916	Apr. 27	65	—	34	12	3·75	34·75	15·00	2·50	52·25	H C.
Class 252		*Kerries*												
1807	L Harrison & Co., Ltd.	Coquet Dabchick	May 17, 1914	June 13	18	—	39	0	3·60	39·00	14·40	Nil	53·40	R N.
1809	J. W. Towler	Gort Curly 9th	May 14, 1915	Apr. 6	86	—	30	4	4·12	30·25	16·48	4·60	51·33	H C
1810	J. W. Towler	Gort Primrose 8th	Mar. 16, 1912	Apr. 20	72	—	33	8	4·87	33·50	19·48	3·20	56·18	3rd Prize
1811	J. W. Towler	Wadlands Dorothy	June 4 1916	May 29	33	—	36	0	3·47	36·00	13·88	Nil	49·88	H.C.
1812	J W. Towler	Wyresdale Daisy 2nd	Apr. 19, 1914	Feb. 25	127	May 24, 1920	26	4	3·82	26·25	15·28	8·70	50·23	H C.
1813	Capt. N. Zambra	Castlelough Nina	Mar. 3, 1915	Apr. 4	88	—	38	12	3·55	38·75	14·20	4·80	57·75	2nd Prize.
1814	Capt. N. Zambra	Minley Mistress	1908	May 20	42	—	45	8	4·17	45·50	16·68	·20	63·38	1st Prize & Champion
Class 253		*Dexters*												
1843	A. W. Bailey Hawkins	Stagenhoe Biddy	May, 1914	May 11	51	—	28	0	3·20	28·00	12·80	1·10	41·90	—
1846	A. C. King	Gort Daisy 5th	Apr. 6, 1910	June 10	21	—	29	8	4·55	29·50	18·20	Nil	47·70	—
1847	A. C. King	La Mancha Madeline	March, 1913	May 17	45	—	42	12	3·70	42·75	14·80	·50	58·05	1st Prize and Reserve for Champion.
1848	Mrs. H. J. Nutt	Barrow Bracelet 4th	Aug. 4, 1914	Apr. 9	83	—	27	8	4·10	27·50	16·40	4·30	49·20	2nd Prize
1851	Mrs. H J. Nutt	Fillongley Favourite	1914	May 23	39	—	32	12	3·80	32·75	15·20	Nil	47·95	—
1852	Mrs. H J. Nutt	Fryerning Black Girl 2nd	Mar. 19, 1914	June 9	22	—	31	8	3·15	31·50	12·60	Nil	44·10	—

Table II. shows the average results of all the animals competing under their respective breeds.

TABLE II.—*Average Results of the Cattle in the Milk Yield Classes.*

No. of cows competing	Breed	Days in milk	Milk	Fat per cent.	Points
			Lb. oz		
29	Shorthorn	42	51 $2\frac{24}{29}$	3·96	67 98
13	Lincolnshire Red Shorthorn	54	63 $13\frac{7}{13}$	3·69	70·00
9	Devon	55	40 $7\frac{1}{9}$	4·02	58·02
2	South Devon	98	49 14	4·23	72·59
3	Longhorn	27	40 $2\frac{2}{3}$	4·53	58·21
9	Red Poll	88	43 12	3·35	61·95
3	Ayrshire	39	49 8	4·17	66 18
11	British Friesian	63	51 4	3·52	67·63
17	Jersey	105	40 $1\frac{7}{17}$	4 89	66·13
9	Guernsey	71	39 $5\frac{4}{9}$	4·11	60·08
7	Kerry	66	35 $9\frac{4}{7}$	3 94	53 96
6	Dexter	43	32 0	3 75	47·30

BUTTER TESTS (CLASSES 254 A & B & 255.)

The prizes given by the English Jersey Cattle Society and the Shorthorn Society attracted a record entry, 81 out of 111 cattle entered going through the competitions in the three classes.

The cows in Classes 254 A & B were weighed on Tuesday evening, June 29, and all the cattle were milked out on the following day at 5 p.m.

The points on which the prizes were awarded were the same as at Cardiff, but cows whose milk showed a ratio of over 30 lb. of milk to the 1 lb. of butter were precluded from taking a prize or commendation.

Table III. gives the full particulars of the trials with the prizes and awards, while Table IV. gives the averages of the various breeds.

It will be noticed that this year for the first time the average figures in the light and heavy weight classes are given in distinct tables so that a comparison of the value for butter production of the light and heavy weight cattle may be considered, it being a question which is the more economical animal when the extra amount of food is taken into consideration.

TABLE III.—RESULTS OF BUTTER TESTS AT DARLINGTON, 1920.

CLASS 254A.—COWS EXCEEDING 900 LB. LIVE WEIGHT.

No. in Catalogue	Exhibitor	Name of cow	Breed	Live weight	Date of birth	Date of last calf	No. of days in milk	Date of last service	Milk yield in 24 hours	Butter yield	† Butter Ratio	Colour and quality of butter		No. of points for butter	No. of points for period of lactation	Total No. of points	Awards	CHURNING TABLE					
																		Time			Temperature, ° F.		
												Colour	Quality					Begin	Finished	Duration (minutes)	Dairy	Cream and churn	Buttermilk
				Lb.		1920		1920	Lb. oz.	Lb. oz.	Lb												
996	R. L. Mond	Crudwell Milky Walton	Shorthorn	1351	Nov. 25, '12	Mar. 11	112	...	53 6	1 9	31·16	Poor	Fair	25·00	5·00	30·00	......	9 42	10 8	26	58	52	56
1009	J. A. Willis	Carlton Queen 7th	Shorthorn	1505	April 15, '12	June 6	25	...	63 4	2 9	21·68	V. Good	V. Good	41·00	Nil	41·00	H. Commended	10 23	10 48	25	58	52	56
1010	Capt. A. S. Wills	Duchess of Cranford 3rd	Shorthorn	1190	Oct. 28, '08	June 3	28	...	59 14	2 4½	26·24	Good	Good	36·50	Nil	36·50	H. Commended	10 21	10 45	24	58	52	54
1019	W. G. Millar	Cockerham Purity	Shorthorn	1379	Feb. 16, '11	April 23	69	...	47 4	1 8¾	30·54	White	Goo	21·75	2·90	27·05	......	10 30	10 51	21	59	52	54
1020	J. Moffat	Watercrook Cress 2nd	Shorthorn	...	July 15, '15	June 11	20	...	47 0	1 13	25·93	Good	Goo	29·00	Nil	29·00	H. Commended	10 51	11 12	21	63	52	56
1026	Capt. A. S. Wills	Thornby Cranford 2nd	Shorthorn	1372	June 2, '15	May 24	38	...	52 0	1 10½	31·39	Poor	Poor	26·50	Nil	26·50	......	11 13	11 32	19	60	52	57
1027	Capt. A. S. Wills	Thornby Foggathorpe 2nd	Shorthorn	1330	Sept. 11, '14	May 14	48	..	47 10	1 10¼	29·02	Fair	Good	26·25	·80	27·05	......	11 17	11 36	19	60	52	59
1029	Capt. H. Fitz-herbert Wright	Yeldersley Red Rose 4th	Shorthorn	1312	Oct. 21, '14	June 14	17	...	47 12	1 4¾	37·72	Good	Fair	20·25	Nil	20·25	......	11 22	11 38	16	61	52	58
1048	A. Palmer	Orange 51st	Shorthorn	1344	Sep. 22, '16	May 4	58	...	45 0	1 15⅝	22·86	White	Good	31·75	1·80	33·55	H. Commended	11 31	11 50	19	61	52	57
1049	F. H. S. Perkins	Hadnock Charming Lass 11th	Shorthorn	1100	Oct. 3, '16	June 6	25	...	31 0	1 6¾	35·56	Good	Poor	22·75	Nil	22·75	......	11 45	11 59	14	62	52	58
1112	John Evens & Son	Burton Cherry 3rd	L'nc'n Red Shorthorn	1652	Oct. 6, '11	May 4	58	...	57 12	2 0	28·57	Fair	Good	32·00	1·80	33·80	H. Commended	11 52	12 18	26	62	52	58
1116	Col. J. Gretton, M.P.	Burton Cork 15th	L'nc'n Red Shorthorn	1526	Apri 14, '13	May 19	43	..	44 0	1 4¼	34·17	Fair	Fair	20·25	·30	20·55	......	12 6	12 15	9	63	52	57
1117	Col. J. Gretton, M.P.	Kerdiston Phoebe 10th	L'nc'n Red Shorthorn	1463	Jan. 26, '16	May 31	31	..	65 0	1 10¼	39·61	Good	Good	26·25	Nil	26·25	......	12 11	12 26	15	63	52	58
1120	A. Barber	Retford Dairymaid	L'nc'n Red Shorthorn	1512	May 3, '11	April 12	80	June 21	58 14	1 13¼	29·12	Good	Good	29·25	4·00	33·25	H. Commended	12 19	12 37	18	63	52	57
1122	S. Blundell	Bendish Marcia 2nd	L'nc'n Red Shorthorn	1351	Aug. 27, '14	May 26	36	...	58 0	1 11¼	31·05	Good	Good	27·25	Nil	27·25	......	12 33	12 50	17	64	52	58
1123	S. Blundell	Bendish Molly	L'nc'n Red Shorthorn	1163	June 11, '11	May 27	35	..	56 4	2 2½	26·08	Fair	Good	31·50	Nil	31·50	H. Commended	1 49	2 0	11	66	52	58
1124	S. Blundell	Bendish Princess 2nd	L'nc'n Red Shorthorn	1412	Aug. 10, '14	May 7	55	...	57 12	1 5¼	43·45	Fair	Good	21·25	1·50	22·75	......	1 56	2 23	27	66	52	59
1125	John Evens & Son	Burton No. 44	L'nc'n Red Shorthorn	1498	May 19, '14	May 14	48	...	49 4	1 14	26·26	Fair	Good	30·00	·80	30·80	......	1 50	2 24	34	66	52	59
1126	John Evens & Son	Burton Fillpail 3rd	L'nc'n Red Shorthorn	1652	Jan. 31, '12	May 27	35	...	50 2	2 0	25·06	Good	Good	32·00	Nil	32·00	H. Commended	2 12	2 28	16	66	52	57
1127	John Evens & Son	Burton Fillingham	L'nc'n Red Shorthorn	1358	April 20, '13	May 21	41	...	68 4	2 11½	25·10	Fair	V. Good	43·50	·10	43·60	Reserve Number	2 8	2 28	20	66	52	57
1182	A. Barber	Retford Quality 2nd	L'nc'n Red Shorthorn	1344	Sep. 4, '17	May 18	44	...	28 0	1 7½	19·01	V. Fair	Good	23·50	·40	23·90	......	2 3	2 18	15	66	52	58
1251	W. G. Busk	Suffragette 1st	Devon	1288	Feb. 1, '18	May 27	35	...	47 2	1 6¾	33·51	V. Good	V. Good	22·50	Nil	22·50	......	2 27	2 47	20	66	52	57
1252	W. G. Busk	Wraxall Fancy	Devon	1274	[illegible]	May 17	45	...	54 2	2 1¼	26·04	Good	V. Good	33·25	·50	33·75	H. Commended	2 17	2 34	17	66	52	59
1254	John H. Chick	Wynford Floss	Devon	1100	Oct. 8, '14	Mar. 8	115	...	30 6	1 6⅝	21·60	Good	V. Good	22·50	5·00	27·50	......	2 23	2 49	26	66	52	57
1255	John H. Chick	Wynford Pill	Devon	1372	July 23, '13	May 21	41	...	45 2	1 15⅝	22·74	Pale	Good	31·75	·10	31·85	......	2 30	2 47	17	66	52	58
1256	W. D. Chick	Compton Cobble	Devon	1162	Mar. 13 '14	May 21	41	...	33 2	1 2¾	28·61	Good	Good	18·50	·10	18·60	......	2 41	3 22	38	65	52	59
1257	W. D. Chick	Compton Glitter 3rd	Devon	1260	Dec. 18, '14	April 18	74	June 15	32 8	1 6⅝	22·85	Fair	Fair	23·75	3·40	26·15	......	2 39	3 27	48	65	52	58

† The "Butter Ratio" represents the number of lb. of milk required to make 1 lb. of butter. Ten lb. of milk are reckoned as equal to an imperial gallon.

TABLE III.—RESULTS OF BUTTER TESTS AT DARLINGTON, 1920—*continued.*

CLASS 254A.—COWS EXCEEDING 900 LB. LIVE WEIGHT.

No. in Catalogue	Exhibitor	Name of cow	Breed	Live weight	Date of birth	Date of last calf	No. of days in milk	Date of last service	Milk yield in 24 hours	Butter yield	1 Butter Ratio	Colour and quality of butter		No. of points for butter	No of points for period of lactation	Total No. of points	Awards	CHURNING TABLE					
																		Time			Temperature, ° F.		
												Colour	Quality					Begun	Finished	Duration (minutes)	Dairy	Cream and churn	Buttermilk
				Lb.		1920			Lb oz	Lb oz.	Lb												
1258	R. A Clarke & Sons	Lady 1st	Devon	1176	Feb. 27, '13	April 22	70	June 16	43 8	1 6¼	30·84	Good	Good	22·50	3·00	25·50	......	2 47	3 29	42	65	52	62
1259	R. A Clarke & Sons	Maud Royal	Devon	1288	Mar 27, '11	June 6	25		44 10	1 10¼	27·20	Good	Good	26·25	Nil	26·25	......	2 49	3 17	28	65	52	56
1281	J. Coaker	Primrose	S'th Devon	1512	April 12, '11	Jan. 16	167	April 2	50 6	2 2¼	23·53	V. Good	V. Good	34·25	12·00	46·25	Third Prize	3 8	3 44	36	65	52	[illegible]
1288	J Ismay	Countess 6th	S'th Devon	1414	Jan. 1, '15	June 1	30	..	49 6	1 10¾	29·59	Good	Fair	26·75	Nil	26·75	... ..	3 10	3 45	35	65	52	58
1301	W H. Sale	Arden Cinderella	S'th Devon	1260	June 17, '16	May 10	52	..	47 6	1 15¼	24·25	Fair	V Good	31·25	1·20	32·45	H Commended	3 6	3 35	29	65	52	58
1345	Capt H. Colmore	Rendlesham Gentlewoman 2nd	Red Poll	1498	Oct. 16 '13	Feb. 5	147	June 16	25 4	0 15¼	26·49	Good	Good	15·25	4·00	19·25	......	3 3	3 33	30	65	52	59
1389	Marchioness of Graham	Gressenhall Rosa	Red Poll	1232	Dec. 21, '14	May 21	41	..	47 4	1 12¾	26·29	Fair	Good	28·75	10	28·85	......	2 41	3 12	31	65	52	58
1391	Major J. A. Morrison	Kettleburgh Rosie 2nd	Red Poll	1372	Nov. 30, '13	April 22	70	..	47 12	1 8¼	30·68	White	Fair	19·25	3·00	22·25	......	2 42	3 15	33	65	52	[illegible]
1393	Capt A. Richardson	Kettleburgh Rosie 4th A1	Red Poll	1400	April 26 '12	June 3	28	..	60 8	1 11	35·85	Good	Fair	27·00	Nil	27·00	......	2 35	3 0	25	65	52	58
1394	Capt A. Richardson	Stowupland Columbine	Red Poll	1232	July 18 '15	April 9	83	May	46 4	1 10½	27·66	Fair	Good	26·50	4·30	30·80	...	2 18	2 47	29	66	52	58
1541	W. Gibson	Moorside Acacia	Ayrshire	1015	April 23, '12	May 13	49	..	56 12	2 7¾	22·84	Fair	V Good	39·75	·90	40·65	H Commended	15	2 32	17	66	52	56
1542	W. Gibson	Moorside Atalanta 3rd	Ayrshire	1001	Aug 3, '14	May 21	41	..	50 12	1 15¾	25·57	Fair	V Good	31·75	10	31·85	...	2 11	3 40	29	66	52	58
1588	W Grainger	Esk Violet	British Friesian	1484	Mar. 1, '14	May 31	31	.	68 12	2 8	27·50	V. Good	V. Good	40·00	Nil	40·00	H. Commended	2 7	2 27	20	66	53	57
1608	A. Weightman	Pomona Audrey	British Friesian	924	Nov. 7, '17	April 26	66	.	53 4	1 13¼	23·88	Good	Good	29·50	2·60	32·10	H Commended	2 1	2 39	38	66	52	59
1609	G. H. Winterbottom, jun.	Pebsham Merrythought	British Friesian	1050	Jan 7, '17	June 13	18		45 4	1 10¼	27·58	Good	V. Good	26·25	Nil	26·25	...	2 2	2 40	38	66	52	58
1668	Capt. C. B. Balfour	Blue Lily	Jersey	952	Nov. 29, '12	Oct 27, 1919	248	Mar 4	25 0	1 0¼	24·61	Good	Fair	16·25	4·00	20·25		2 1	2 20	19	66	52	59
1669	Capt. C. B. Balfour	Moona	Jersey	952	Feb. 24, '14	Mar 15	108	June 13	43 8	2 7½	17·62	Good	Good	39·50	6·80	46·30	2nd Prize and Silver Medal	1 59	2 25	26	66	52	59
1678	W. M. Cazalet	Fairlawne Hussy	Jersey	924	Aug. 8 '16	Feb. 19	133	May 3	50 4	2 11½	18·58	Good	V Good	43·25	9·30	52·55	1st Prize and Gold Medal	1 56	2 37	41	66	52	57
1679	Mrs McIntosh	Sweet Rose	Jersey	924	Aug 25, '12	May 9	53	.	33 12	1 11¼	19·81	Good	Good	27·25	1·30	28·55	...	12 17	12 40	23	63	53	5[illegible]
1689	R. Bruce Ward	Ida	Jersey	1050	Mar 15 '14	Feb. 4	14[illegible]	May 12	47 0	1 15½	23·97	V Good	Good	31·50	3·00	34·50	Cert of Merit	12 3	12 16	13	62	53	59
1691	Dr. H. Watney	Aurelius Time	Jersey	852	Nov. 22, '12	Jan 8	175	Mar 12	34 0	1 7½	23·11	Good	Good	23·50	12·00	35·50	Cert of Merit	11 47	12 7	20	62	53	60
1692	Dr H. Watney	Lucy's Huckleberry	Jersey	1061	Nov. 19 '10	Mar. 27	96	June 19	42 12	2 4½	18·73	V Good	Excel'nt	36·50	5·60	42·10	Cert of Merit	11 50	12 15	25	62	53	5[illegible]
1693	Dr. H. Watney	Sabina's Goose 2nd	Jersey	1022	Dec. 2 , '13	April 8	54	June 14	43 8	2 6	18·26	Good	V Good	38·00	4·40	42·40	Bronze Medal	11 39	12 6	27	62	53	58
1694	Dr. H. Watney	Sabina's Maple	Jersey	1022	Oct 10, '12	April 4	58	June 20	37 4	2 1¾	17·65	V Good	V Good	33·75	4·80	38·55	Cert of Merit	11 26	11 5[illegible]	2[illegible]	61	5	59
1695	Mrs Edgar Watts	Duckwing	Jersey	952	Aug 30, '10	April 29	63	.	44 0	2 4¾	19·15	Good	V Good	30·75	2·30	33·05	Cert of Merit	11 18	11 45	27	61	53	59
1706	R. Bruce Ward	Caper	Jersey	938	Jan. 21 '17	April 3	59	June 20	44 8	1 9¼	2 92	Good	Good	25·50	1·90	31·40	Cert of Merit	11 0	11 45	45	60	52	59
1708	R. Bruce Ward	Capella	Jersey	924	Feb. 25, '17	Mar 31	92	.	35 0	1 4¾	26·08	Fair	Good	20·75	5·00	25·7		11 5	11 31	26	60	52	58
1767	G. F. Ferrand	Fussey's Dora	Guernsey	[illegible]	July 21, '12	Mar. 5	118	May 20	38 4	1 7¼	26·32	Excel'nt	V Good	23·25	7·80	31·05		11 8	11 30	22	60	52	57
1770	Mrs. Jervoise	Fanny du Foulon 22nd	Guernsey	1134	July 3, '11	May 16	46	..	46 0	1 1½	23·36	Excel'nt	Excel'nt	31·50	60	32·10	H Commended	10 57	11 24	27	61	52	57
1773	Mrs. Pratt Barlow	Blue Bell of Goodnestone	Guernsey	1094	April 9, '14	May 8	54	.	30 0	1 2¾	25·94	Fair	Fair	18·25	1·40	19·65		10 50	11 20	30	59	52	57
1811	J. W. Towler	Wadlands Dorothy	Kerry	[illegible]24	June 4, '16	May 29	33	...	36 0	1 4	28·80	Poor	Good	20·00	Nil	20·00		9 48	10 15	27	58	52	57

TABLE III.—RESULTS OF BUTTER TESTS AT DARLINGTON, 1920—continued.

CLASS 254 B.—COWS NOT EXCEEDING 900 LB LIVE WEIGHT

No in Catalogue	Exhibitor	Name of cow	Breed	Live weight	Date of Birth	Date of last calf	No of days in milk	Date of last service	Milk yield in 24 hours	Butter yield	[1] Butter Ratio	Colour and quality of butter		No of points for butter	No of points for period of lactation	Total No of points	Awards	CHURNING TABLE					
																		Time			Temperature, ° F		
												Colour	Quality					Begun	Finished	Duration (minutes)	Dairy	Cream and churn	Buttermilk
				Lb		1920			Lb oz	Lb oz	Lb												
1674	Mrs Evelyn	Dairymaid	Jersey	798	June 1, '12	Mar 29	94	June 19	39 12	1 15¼	20 35	Good	Good	31 25	5 40	36 65	3rd Prize	12 19	12 33	14	63	53	60
1677	Miss C Byng Lucas	Cowslip 74th	Jersey	812	Dec 14 16	April 18	74	June 24	32 4	1 10½	19 47	Fair	V Good	26 50	3 40	29 90		12 21	12 45	24	63	53	60
1683	Major Hon H Pearson	Plymouth Lady	Jersey	868	May 31, 16	April 25	67	.	46 0	2 2½	21 33	V Good	V Good	34 50	2 70	37 20	2nd Prize	12 31	12 55	24	64	53	60
1686	Mrs Rudd	Meadow Val Pride	Jersey	806	Apr 1, '18	Mar 24	99	..	44 12	2 0¾	21 86	Good	V Good	32 75	5 00	37 75	1st Prize	11 58	12 2	25	62	53	56
1706	J H N Roberts	Quaintness	Jersey	728	Apr 4, '17	April 19	73	..	30 12	1 5¾	22 62	Fair	Good	21 75	3 30	25 05	...	11 15	11 40	25	60	52	60
1718	Mrs Jerome	Judith 2nd	Jersey	693	May 10 '18	May 18	44		21 12	1 3¼	18 07	Fair	Good	19 25	40	19 65		10 40	11 1[illegible]	3[illegible]	[illegible]	5[illegible]	57
1788	G P Sauday	Lisle's Mousette 9th	Guernsey	847	June 27 '16	April 27	65	.	34 12	1 4¼	27 45	Excellent	V Good	20 25	2 50	22 75		9 56	10 18	22	58	52	56
1807	L Harrison & Co Ltd	Coquet Dabchick	Kerry	868	May 17, '14	June 13	18	.	39 0	1 4¾	30 07	Fair	Fair	20 75	Nil	20 75	.	[illegible]	10 3	4	[illegible]	52	57
1809	J W Towler	Gort Curly 9th	Kerry	526	May 14, 15	April 6	86	.	30 4	1 6¾	21 27	Fair	Fair	[illegible] 75	4 60	27 35		[illegible]	10 20	34	58	52	5[illegible]
1810	J W Towler	Gort Primrose 8th	Kerry	770	Mar 16, '12	April 20	72	..	33 8	1 12¾	18 47	Fair	Good	[illegible]	3 20	31 45	H C	9 50	10 [illegible]	4[illegible]	[illegible]	52	56
1812	J W Towler	Wyresdale Dairy 2nd	Kerry	686	Apr 19, '14	Feb 25	127	May 24	26 4	1 0½	25 45	White	Good	16 50	8 70	25 20		9 4[illegible]	10 33	4[illegible]	58	52	56
1817	J W Towler	Yaddy Oona 2nd	Kerry	588	Mar 4, '18	June 5	26	...	14 12	0 9⅝	24 54	White	Good	9 0	Nil	9 50		9 42	10 4	60	[illegible]	52	56
1818	J W Towler	Yaddy Trent 4th	Kerry	623	Mar 26, '18	May 6	56	.	20 0	0 14¼	22 45	White	Good	14 25	1 60	15 85		9 3	10 40	[illegible]	[illegible]	52	55
1851	Mrs H J Nutt	Fillongley Favourite	Kerry	700	1914	May 23	30	...	32 12	1 4½	25 56	Fair	V Good	20 00	Nil	20 00		9 40	10 21	41	[illegible]	52	56

[1] The "Butter Ratio" represents the number of lb of milk required to make 1 lb of butter. Ten lb of milk are reckoned as equal to an imperial gallon.

TABLE III.—RESULTS OF BUTTER TESTS AT DARLINGTON, 1920.

CLASS 255.—DAIRY SHORTHORN COWS OR HEIFERS.

No. in Catalogue	Exhibitor	Name of cow	Live weight	Date of Birth	Date of last calf	No. of days in milk	Date of last service	Milk yield in 24 hours	Butter yield	¹ Butter Ratio	Colour and quality of butter		No. of points for butter	No. of points for lactation	Total No. of points	Awards	CHURNING TABLE					
																	Time			Temperature, ° F.		
											Colour	Quality					Begun	Finished	Duration (minutes)	Dairy	Cream and churn	Buttermilk
					1920			Lb. oz.	Lb. oz.	Lb.												
986	Maj. G. J. Buxton	Castel Maid	...	April 7, '11	June 13	18	...	57 2	2 4¼	25·21	White	Bad	36·25	Nil	36·25	R.N.	9 40	9 57	17	58	52	56
992	R. W. Hobbs & Sons	Lemhill 32nd	...	Nov. 1, '12	April 23	69	...	37 8	0 15¾	38·00	Good	Good	15·75	2·90	18·65	...	9 35	9 55	20	58	52	56
996	R. L. Mond	Crudwell Milky Walton	...	Nov. 25, '12	Mar. 11	112	...	53 6	1 9	34·10	Fair	Good	25·00	5·00	30·00	...	9 12	10 8	26	58	52	56
997	D. E. Campbell Muir	Marchioness of Barrington 3rd	...	Aug. 17, '09	May 10	52	...	55 12	1 10	34·30	V. Good	Good	26·00	1·20	27·20	...	9 33	9 50	17	58	52	58
998	Olympia Agricultural Co., Ltd.	Bright Aster	...	Jan. 16, '10	May 31	31	...	58 12	2 6	24·73	V. Good	V. Good	38·00	Nil	38·00	2nd Prize	9 15	9 28	13	58	52	57
1001	C. & E. Stephenson Ltd.	Rosannah 6th	...	Dec. 10, '11	May 18	44	...	65 14	1 9½	41·33	Poor	Poor	25·50	·40	25·90	...	9 47	10 4	17	58	52	56
1005	The Duke of Westminster	Bare Charm	...	Nov. 20, '13	June 9	22	...	63 6	2 1¼	30·49	Good	Good	33·25	Nil	33·25	...	9 51	10 18	27	58	52	57
1006	The Duke of Westminster	Cressida 47th	...	April 6, '12	May 22	40	...	54 12	2 2¾	25·20	Good	Good	34·75	Nil	34·75	H.C.	9 49	10 16	27	58	52	53
1008	The Duke of Westminster	Marjorie Grey	...	May 12, '12	May 29	33	...	56 6	1 13¾	30·31	Good	Good	29·75	Nil	29·75	...	10 13	10 34	21	58	52	57
1009	J. A. Willis	Carleton Queen 7th	...	April 15, '12	June 6	25	...	63 4	2 9	24·68	V. Good	V. Good	41·00	Nil	41·00	1st Prize	10 23	10 48	25	58	52	56
1010	Capt. A. S. Wills	Duchess of Cranford 3rd	...	Oct. 28, '08	June 3	28	...	59 14	2 4½	26·24	Good	Good	36·50	Nil	36·50	3rd Prize	10 21	10 45	24	58	52	54
1013	H. A. Brown	Johnby Rose 18th	...	Sept. 2, '14	May 23	39	...	55 0	1 11¼	32·29	Poor	Poor	27·25	Nil	27·25	...	10 19	10 38	19	58	52	57
1014	E. Ezra	Roseleaf 2nd	...	May 7, '15	May 27	35	...	38 12	1 5¾	28·50	Fair	Fair	21·75	Nil	21·75	...	10 44	11 0	16	59	52	56
1018	R. W. Hobbs & Sons	Rose 61st	...	May 25, '15	May 25	37	...	32 4	1 8	21·50	Fair	Fair	24·00	Nil	24·00	...	10 53	11 20	27	60	52	56
1019	W. G. Millar	Cockerham Purity	...	Feb. 16, '14	April 23	69	...	47 4	1 8¾	30·54	White	Good	24·75	2·90	27·65	...	10 30	10 51	21	59	52	54
1020	J. Moffat	Watercrook Cress 2nd	...	July 15, '15	June 11	20	...	47 0	1 13	25·93	Good	Good	29·00	Nil	29·00	H.C.	10 51	11 12	21	60	52	56
1024	F. H. Thornton	Fairy Duchess 15th	...	Nov. 14, '14	May 23	39	...	50 0	2 4	22·22	Good	Good	36·00	Nil	36·00	H.C.	11 7	11 28	21	60	52	57
1026	Capt. A. S. Wills	Thornby Cranford 2nd	...	June 2, '15	May 24	38	...	52 0	1 10½	31·39	Poor	Poor	26·50	Nil	26·50	...	11 13	11 32	19	60	52	57
1027	Capt. A. S. Wills	Thornby Foggathorpe 2nd	...	Sept. 11, '14	May 14	48	...	47 10	1 10¼	29·02	Fair	Good	26·25	·80	27·05	...	11 17	11 36	19	60	52	59
1029	Capt. H. Fitzherbert Wright	Yeldersley Red Rose 4th	...	Oct. 21, '14	June 14	17	...	47 12	1 4¼	37·72	Good	Fair	20·25	Nil	20·25	...	11 22	11 38	16	61	52	58
1038	Chivers & Sons, Ld	River Meadow Pippit 4th	...	July 16, '16	May 10	52	...	50 0	1 4¾	38·55	Poor	Poor	20·75	1·20	21·95	...	11 27	11 45	18	61	52	57
1039	The Earl of Derby, K.G.	Knowsley Waterloo Gift	...	Oct. 20, '16	June 8	23	...	39 12	1 9¼	25·18	Good	Good	25·25	Nil	25·25	...	11 30	11 44	14	61	52	57
1044	R. W. Hobbs & Sons	Sybil 26th	...	Feb. 23, '16	May 6	56	...	38 14	1 8¼	25·64	Fair	Good	24·25	1·60	25·85	...	11 39	12 0	21	62	52	58
1048	A. Palmer	Orange 51st	...	Sept. 22, '16	May 4	58	...	45 6	1 15¾	22·86	White	Good	31·75	1·80	33·55	H.C.	11 31	11 50	19	61	52	57
1049	F. H. S. Perkins	Hadnock Charming Lass 16th	...	Oct. 3, '16	June 6	25	...	51 0	1 6¾	35·86	Good	Poor	35·86	Nil	22·75	...	11 45	11 59	14	62	52	58
1051	M. & P. Perkins	Vale Topsy 7th	...	Mar. 18, '16	June 17	14	...	49 12	1 5¼	37·45	Good	Good	21·25	Nil	21·25	...	11 51	12 2	11	62	52	58
1054	F. H. Thornton	White Rose	...	July 18, '16	May 24	38	...	48 14	1 10½	29·50	Good	Good	26·50	Nil	26·50	...	12 1	12 15	14	63	52	56

[1] The "Butter Ratio" represents the number of lb. of milk required to make 1 lb. of butter. Ten lb. of milk are reckoned as equal to an imperial gallon

TABLE IV.—*Average Results of the Cattle in the Butter Test Classes.*

CLASS 254A—EXCEEDING 900 LB LIVE WEIGHT.

No of cows competing	Breed	Live weight	Days in milk	Milk	Butter	Ratio	Points
		Lb		Lb. oz.	Lb. oz	Lb	
10	Shorthorn . .	1376	44	51 7⅓	1 12¾	29·32	29·15
11	Lincoln. Red Shorthorn	1478	46	53 7 1/11	1 13¾	28 76	30·35
8	Devon .	1277	55	41 5	1 8⅞	26 43	25·54
2	South Devon	1463	98	49 14	1 14½	26 15	35 83
1	Longhorn	1260	52	47 6	1 15¼	24 25	32·21
5	Red Poll . .	1347	74	45 6⅖	1 7 1/10	31 10	26·42
2	Ayrshire . .	1008	45	53 12	2 3¾	24 05	35·54
3	British Friesian . .	1152	38	55 12	1 15 11/12	27·94	31 05
12	Jersey	973	114	40 10⅔	1 15 1/14	22 30	38·40
3	Guernsey .	1064	72	37 6⅔	1 8⅓	24 60	27·32
1	Kerry	924	33	36 0	1 4	28·80	20 00

CLASS 254B—NOT EXCEEDING 900 LB LIVE WEIGHT.

No of cows competing	Breed	Live weight	Days in milk	Milk	Butter	Ratio	Points
6	Jersey .	799	75	35 14	1 11⅘	20 74	30·54
1	Guernsey	847	65	34 12	1 4¼	27 45	22·73
6	Kerry . .	727	64	27 15⅓	1 2⅓	23 96	20 44
1	Dexter .	700	39	32 12	1 4½	25 56	20 50

CLASS 255—DAIRY SHORTHORN COW OR HEIFER.

No of cows competing	Breed	Live weight	Days in milk	Milk	Butter	Ratio	Points
27	Shorthorn .	—	40	50 10⅔	1 11 11/27	29·42	27·03

MILKING TRIALS (GOATS). CLASSES 269 & 270.

Forty goats were entered for these competitions, seven in Class 269 for goats that have previously won a 1st, 2nd or 3rd prize in any milking competition, the remaining thirty-three being in Class 270. The numbers actually tested were three and twenty-two respectively.

The conditions regulating the trials and the points awarded were different from those in force last year at Cardiff, being simplified so as to enable the awards to be published before the end of the Show. They were as follows:—

One point for every 1 lb. of milk.

One point for every completed day since kidding, calculated to the first day of the trials, deducting the first 40 days. Maximum lactation points 6.

Goats that have not produced a live kid within the year previous to the first day of the Show will be disqualified.

Table V. gives the full particulars of the trials and the prizes awarded.

TABLE V.—MILK-YIELD CLASSES FOR GOATS AT DARLINGTON, 1920

CLASS 259.—GOATS THAT HAVE PREVIOUSLY WON A FIRST, SECOND OR THIRD PRIZE IN ANY MILKING COMPETITION

No. in Catalogue	Exhibitor	Name of Goat	Breed	Date of Birth	Date of last Kid	No. of days in milk	Milk yield in 24 hours		Points			Awards
					1920		lb.	oz.	Milk	Lactation	Total	
1929	Mr. M. Grace	Trent[illegible]	Anglo-Nubian	Mar. 6, 1[illegible]	Jan. 16	1[illegible]	1		11	6[illegible]	1037	Second Prize
1964	Baroness Burton	Leazes Pearl	Anglo-Nubian	May 1, 1[illegible]	Mar.	4			11		91[illegible]	Third Prize
1969	Sam Foxton	Bl[illegible]	Toggenburg	Mar. 17	Apr. [illegible]				1	1 0	121	First Prize

CLASS 260.—GOATS NOT ELIGIBLE FOR CLASS 259

No. in Catalogue	Exhibitor	Name of Goat	Breed	Date of Birth	Date of last Kid	No. of days in milk	lb.	oz.	Milk	Lactation	Total	Awards
1[illegible]	Mr. I. Pease	[illegible] Mavis	Anglo-Nubian	[illegible] 15	Apr.	8		9	1	4	11[illegible]	—
1934	Mrs. R. Pease	[illegible]	Anglo-Nubian	May [illegible] 16	Apr.	8		2	1	43	1 4	—
1930	Mrs. I. Pease	[illegible]	Anglo-Nubian	Mar. 1	Apr. 15	4	[illegible]	6	6 7	[illegible]		—
1[illegible]	Mrs. K. Kelly	[illegible]	Anglo-Nubian	Jan. 4, 15	May 6	[illegible]	8	0	80	1[illegible]	960	—
1[illegible]4	Miss K. [illegible]ell	[illegible] Dimples	Anglo-Nubian	[illegible] 1	Mar.				3	—	1	—
1944	Mr. C. L. [illegible]esard	[illegible]	Anglo-Nubian	May [illegible] 1	May 18	41		11	56	4	6 8	—
1[illegible]45	Miss M. Henderson	[illegible]	Swiss and Anglo-Swiss	Mar. 6, 14	Apr.	3		1		150	1[illegible]	—
1[illegible]	Mrs. J. C. Straker	[illegible]	Swiss or Anglo-Swiss	Apr. 4, 1	Mar. 24		1	0	10 37	5 1	1 9	Third Prize
1[illegible]5	Mr. G. S[illegible]ane	[illegible]	British Alpine	Jan. 6, 1	[illegible] 15		5	1	606	40	11	—
1[illegible]4	Mrs. J. C. Straker	[illegible]	British Alpine	Feb. 17	Apr. 1				15	[illegible]	11 5	—
1961	Miss Alexander	[illegible]	Anglo-Nubian-S[illegible]	[illegible] 6	Apr. 15			6	3	3		—
1973	Baroness Burton	[illegible]	Anglo-Nubian-Toggenburg	Apr. 3	May [illegible]			[illegible]	[illegible]	1 0	8	—
1[illegible]0	Mr. W. J. Goode	[illegible] Chocolate	Anglo-Nubian-Toggenburg	Feb. 16, 14	Apr.	[illegible]	4	2	4 87	[illegible]	7 1	—
1971	Mrs. W. Her[illegible]n	[illegible] Thistle	Anglo-Nubian Swiss	1	May 1	1	11	[illegible]	11 18	10	13 5	—
1[illegible]4	Duchess of Newcastle	Gladys Mummelle	—	Apr. [illegible] 14	Apr. 1		3	14	18	3 [illegible]		—
1[illegible]6	Mrs. I. Pease	[illegible]	Anglo-Nubian	[illegible] 1	Feb. [illegible]	1[illegible]	[illegible]	1[illegible]	[illegible]	6 0	11 5	—
1[illegible]8	Mr. C. J. [illegible]ickard	Pollenza	Anglo-Nubian Swiss	Apr. 18, 1	June 5	[illegible]		1[illegible]	6 51	—	681	—
1982	Miss [illegible]otton	[illegible] Dainty	Cross Bred	Mar. 1, 15	[illegible] 12	50	13	1	1 6[illegible]	400	1 6	—
198[illegible]	Mrs. J. C. Straker	Lee [illegible] Kidstone	—	June [illegible] 1	Feb. 9	1[illegible]	10	11	10 6[illegible]	600	16[illegible]	First Prize
1[illegible]	Mrs. J. C. Straker	Withlean Mo[illegible]	Anglo-Nubian Swiss	Apr. 3[illegible]	Mar. 1	61	9	8	[illegible]	10	11 60	Second Prize
19[illegible]	F. A. Walmsley	Ath[illegible]stone Faith	—	May 3, 1	Mar. [illegible]	11		1	[illegible] 6	00	15[illegible]	—
1980	F. A. Walmsley	Towcester Gladys	—	June 16, 16	May 5	4	10	[illegible]	0[illegible]1	140	11[illegible]1	—

EXPERIMENTS IN THE DAIRY

The following experiments to show the variation in the percentage of fat in milk at different depths of a churn of milk, and also in milk drawn direct from the cow, were carried out in the Dairy at Darlington, the milk selected being from Shorthorn and Channel Island Cattle :—

EXPERIMENT 1.

Two churns filled with milk were stood for four hours, after which samples were taken by a sampling tube as follows :—

1. From milk at the bottom of the churn.
2. From the middle of the churn.
3. From the top of the churn.
4. From the whole of the milk in the churn.

The percentages of fat were as follows :—[1]

	Bottom Fat per cent	Middle Fat per cent	Top Fat per cent	Whole column Fat per cent
Churn 1 . .	1·4	3·55	Too much fat to be read [2]	5·55
„ 2	2·5	2·75	Do	4·925

EXPERIMENT 2

One Shorthorn and two Channel Island cows were selected and an 8 oz. sample bottle of milk was obtained as follows from each cow :—

1. From the first-drawn milk.
2. From the last-drawn milk.

The percentages of fat as shown by the Gerber process were as follows :—

	Shorthorn Fat per cent	Channel Island 1 Fat per cent	Channel Island 2 Fat per cent
First-drawn milk	·06	1·00	1·30
Last-drawn milk	Too much fat to be read.[2]	Too much fat to be read.[2]	Too much fat to be read.[2]
Mixed samples .	5·60	6·35	5·50

These two experiments seem to show that milk in the udder of the cow just before she is milked is, as regards the stratum of fat, much the same as milk that has been standing in a churn for some little time. If this conclusion is correct, to sell the first-drawn milk from a cow, leaving the rest for her calf (*Grigg* v. *Smith* [87, L.J.K.B. 488]; R.A.S.E. Journal, vol. 79, p. 135), as also to sell milk from the bottom of a churn of milk without using a "plunger," or otherwise causing the milk to be mixed (*Knowles* v. *Scott* [1918], S.C (J.), 32); R.A.S.E. Journal, vol. 80, p. 161), would appear to be almost, if not quite, as bad as abstracting the fat by other methods, and certainly prejudicial to the purchaser.

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[1] Two analyses by the Gerber process were made in each case

[2] The test tubes are only graduated up to 9 00

CREAM GAUGE TUBES.

An experiment similar to that carried out at Cardiff, was repeated at Darlington with similar results, showing that while graded glasses may give a comparative idea of the differences in cream that may exist between individual milks, they cannot be accepted as accurate.

TABLE VI.

Breed	Percentage of Cream shown in Cream Gauge	Butter Fat by Gerber. Average of 2 samples
		Per cent
Shorthorn .	9 0	3·3
Longhorn . .	13 5	4 1
Red Poll .	14 0	4·3
Ayrshire . .	10 0	3 875
British Friesian .	12 5	3 9
Jersey	17 5	5 325
Guernsey . . .	14 0	4·7
Dexter	11 0	4 1
Park . . .	8 0	3·5

THE BROM-CRESOL PURPLE TEST.

This test which is very easy to manipulate should prove most valuable to owners of dairy cattle, as it enables them, where the milk of the herd is abnormal, to pick out the cow or cows whose milk may be the cause of the abnormality, and further, to trace the doubtful milk to the particular quarter of the cow or cows affected.

This test was carried out by Captain John Golding, of the Dairy Research Institute, who most kindly explained and illustrated the process.

His report is as follows :—

The unique possibilities of the Royal Agricultural Society's Show for obtaining a large number of samples of milk from cows of different breeds, afforded just the opportunity required by the Research Institute in Dairying, for testing the variation in the re-action of freshly drawn samples of such milk by means of the Brom-Cresol Purple Test.

The test as described by L. L. Van Slyke and J. C. Baker in Technical Bulletins 70 and 71 of the New York Agricultural Experiment Station, Geneva, New York, consists in adding three cubic centimetres of milk to one drop ($\frac{1}{20}$th c.c.) of a saturated solution of Brom-Cresol Purple in water placed in a small tube. This is afterwards mixed by shaking and the colour produced is observed. With normal milk a bluish-grey colour is produced. If the colour differs appreciably from this, the re-action is abnormal. Acid milks give a yellow colour or a lighter blue. A deeper blue colour may indicate (1) milk from diseased or abnormal udders; (2) watered milk; (3) milk very poor in fat; or (4) milk containing alkali or alkaline salts. Previous trials had indicated the value of the method as a means of finding out abnormal milks.

The practical value of a simple rapid test which would indicate abnormality in the milk of individual cows, must be apparent to all cheese makers who have been troubled with the "Felon Milk" of Yorkshire, the "Weed" of Scotland and those temporary abnormalities which may sometimes escape even the most observant cowman, but which may spoil the bulk of the milk and cause loss to the industry if not detected in time.

No definite annoucement as to the value of the test can be made till many more experiments have been performed. It is, however, a simple test which has possible value for the detection of abnormality in the milk of individual cows.

For using the test two cautions are necessary. Firstly, the tubes should be very clean and boiled in distilled water and drained before use. Secondly, the drops of indicator used should be of the same size, using one tube or burette for each series of tests or dropping tubes of the same external diameter held in a perpendicular position and clear of the sides of the receiving tube.

PRACTICAL WORK.

In order to demonstrate the variation in the first drawn milk, 48 samples were obtained, through the kindness of a farmer in the neighbourhood, from the first drawn milk from each teat of twelve of his cows.

These were tested as above described, and the tubes fixed on a white board by means of little loops of elastic, the tubes arranged in groups according to the depth of colour.

In the original paper the groups for comparison were made by the addition of quantities of $\frac{N}{10}$ soda added to 10 c.c. of fresh milk and increasing from group to group by ·1 c.c. extra $\frac{N}{10}$ soda.

In order to cover the range found, colour standards were prepared as follows:—10 c.c. of fresh milk being taken in each case.

Group	1	2	3	4	5	6	7	8
$\frac{N}{10}$ Soda added	0	2	·4	6	·8	1·0	1 2	1·4
Number of samples of first drawn milk placed in each group . .	14	18	12	3	1	1		

The four samples falling in groups 4 and 5 came from a Shorthorn cow which was found on enquiry to have a sore and unhealthy udder.

Another sample was taken from a cow which had recently yielded milk "with white clots in it." This gave a colour corresponding with group 6.

Experiments with milk of other herds have indicated that the method might give valuable information in cases of Garget or udder infection, where the milk of separate quarters is tested, more especially if first drawn milk is taken for the test.

The special object of the experiments at Darlington was to ascertain if any marked difference could be observed in the milk of the different breeds of cows as a preliminary to a further trial of the method. The samples were taken as the milk was delivered at the Dairy, each sample being from the milk of one or more cows of some special breed belonging to one exhibitor.

172 of these samples, representing milk from 13 different breeds, were tested.

An analysis of the results follows :—

Breed.	Total No. of samples tested.	Group.							
		1	2	3	4	5	6	7	8
Shorthorn	31	8	13	9	—	—	—	—	1
Jersey	27	10	13	4	—	—	—	—	—
Guernsey	23	15	7	1	—	—	—	—	—
Lincoln Red . . .	18	1	8	8	—	1	—	—	—
Devon	16	7	3	6	—	—	—	—	—
Friesian	13	4	6	3	—	—	—	—	—
Red Poll	10	2	5	2	—	—	1	—	—
Ayrshire	8	4	3	1	—	—	—	—	—
Park Cattle . . .	7	5	2	—	—	—	—	—	—
Dexter	7	4	2	1	—	—	—	—	—
Longhorn	5	3	2	—	—	—	—	—	—
Kerry	4	4	—	—	—	—	—	—	—
Shetland	2	2	—	—	—	—	—	—	—

As mentioned in Bulletin 71, page 5, quoted above, milks rich in fat give an appreciably lighter colour. From this it would be expected that breeds giving milk rich in fat would show a higher number of samples in groups one and two. As the cream rises and the colours in the lower parts of the tubes are compared this difference becomes less marked.

The cause of the three abnormal samples falling in groups 5, 6 and 8, could not be investigated on the Show Ground as access to the cows was not possible. These three results were the only abnormal ones. The limits of variation of other samples fall within what may be called normal variation. The indications of variation within these limits could only be determined by a large number of tests under more normal conditions.

CHEESE EXPERIMENTS.

The experiments commenced last year at the Cardiff Show with the object of ascertaining (a) the time taken, the nature of the coagulation of the milks from the different breeds of cattle in the Show Ground, and (b) the quality and weights of the cheeses made, were continued this year.

It was arranged that the cheeses should be sent to Reading to be kept until ripe for the opinion of Mr. Alec Todd, of the British Dairy Institute, who had kindly undertaken to give his opinion on them, and meanwhile to look after the cheeses until such time as they were ready to be judged.

The cheeses were despatched by rail from Darlington, but were a long time on the journey and so roughly handled in transit that when they arrived they were practically useless.

This is the more unfortunate as this experiment required careful work and attention, and the results this year, so far as they went, were satisfactory and should have been very helpful to those who make cheese.

SCALDED CREAM EXPERIMENTS.

At the last three Shows of the Society experiments in scalding the milks from the different breeds of cattle exhibited have been reported on in the Society's JOURNAL.

They show that milks rich in fat require—

1. Less time for setting before scalding.
2. The scalding to be at a higher temperature.
3. The duration of the process in scalding to be longer.
4. After scalding, the cream to be left from two to four hours longer than creams from milk not so rich in fat.

The experiments this year at Darlington, which were carried out by Miss A. J. W. Nicholas, M.B.E., confirm these conclusions, as will be seen from the results given in the following table :—

TABLE VII.

Breed	Weight of milk	Time setting before scalding	Temperature at which scalding completed	Time of scalding	Time standing before skimming	Weight of skimmed cream	Fat on skimmed milk	Quality
	Lb.	Hours	° Fahr	Minutes	Hours	Lb oz	Per cent	
Shorthorn . .	15	15	188	40	24	0 14	·3	Good.
Lincoln Red Shorthorn	15	15	185	40	24	1 1	·65	Fair.
Devon . .	15	15	180	35	24	0 12	·4	Very good.
South Devon .	15	14	190	45	25	0 13	·9	Good.
Longhorn . .	15	14	195	60	22	1 2	·4	Very good.
Red Poll . .	15	17	180	45	24	0 13	·35	Fair.
Ayrshire . .	15	17	180	30	24	0 15	·7	Very good.
British Friesian.	15	17	180	35	24	0 11	·3	Good.
Jersey . .	15	11	195	50	26	1 7	1·0	Excellent.
Guernsey . .	15	11	188	15	26	1 1	·8	Excellent.
Kerry . .	15	15	175	10	26	1 3	·43	Very good.
Park . . .	15	16	185	40	24	1 0	·4	Very good.

The following table gives the times and temperatures for producing the best creams both in flavour, texture, and appearance. They are the results of several experiments carried out in the Showyard and elsewhere.

TABLE VIII.

Breed	Time setting before scalding	Best scalding temperature	Correct time of scalding	Time standing before skimming
	Hours	°Fahr.	Minutes	Hours
Shorthorn . . .	15	185	45	24
Lincoln Red Shorthorn .	15	180	40	24
Devon . .	15	180	40	24
South Devon . .	14	185	45	25
Longhorn . .	14	190	50	22
Red Poll . .	17	185	40	24
Ayrshire . .	17	175	30	21
British Friesian . .	17	180	40	24
Jersey .	14	195	50	26
Guernsey .	14	190	45	26
Kerry	15	180	40	26
Dexter	15	180	40	26
Park.	16	185	40	24

The work in the Dairy this year was heavier than usual largely attributable to the number of entries in the Milk-yield and Butter Test trials, and also to the experimental work, which necessitates the greatest care on the part of all the workers in the Dairy. I gratefully acknowledge the assistance I received from my stewards, Messrs. Ashton, Byng-Stephens and Routh; from the lady workers in the Dairy, who never seem to tire; from Messrs. Hammond and Craufurd in the Milk-yield and Butter Test trials; from Captain Golding, of the Dairy Research Institute, for the work entailed in the Brom-Cresol Purple experiment, and for his courtesy in explaining its usefulness; from Mr. Hasted, who has always been my right-hand man; and, lastly, from the whole of the working staff in the Dairy.

ERNEST MATHEWS.

Little Shardeloes,
Amersham.

AGRICULTURAL EDUCATION EXHIBIT, DARLINGTON, 1920.

Careful scrutiny of the people entering and leaving the Educational Pavilion during intervals covering three days led one to the conclusion that the great majority of them were not directly concerned with the industry. Of such as appeared to be closely connected with farming, the majority were women, and the male agriculturists visiting this section of the Show were for the most part the younger men. The contrast with the attention bestowed on some of the other exhibits was striking, for the majority of the people viewing the livestock and machinery sections were very evidently farmers, and whilst it would certainly be fallacious to draw the inference that the interests of agriculturists are entirely directed to practical matters, it does indicate a state of affairs with which many people are conversant, *viz*., that the persons who take most interest in agricultural and rural education are those just on the fringes of the industry. This is generally the position in the country at large, and it was certainly the position at the Show. In the case of Agricultural Education Exhibits it is partly due to the conditions which limit the display, and partly to the ideas of the exhibitors. The exhibitors have not yet developed sufficiently the real showman's capacity of judging the minds of the people he desires to attract. It is true that they do attempt to make the facts and theories they wish to convey visible, but they still have to be looked for and rarely are the facts or ideas driven home with any forcefulness. It would be a pity, of course, to encourage any sensationalism, but one or two illustrations of what would appear to be required may be useful. In the North of England the improvement of pastures is one of the most important subjects which could be publicly demonstrated. This was recognised by the institutions concerned, for the Cumberland and Westmorland Farm School exhibited turves showing the effect of dressing with basic slag; Armstrong College was also showing turves, and Leeds University was exhibiting turves showing the effect of treatment with ground lime-stones. These were all good ocular demonstrations of the benefit of treating pastures, and as far as it went the Leeds University set of turves was one of the most striking exhibits in the whole Pavilion. But there was no attempt to show the cost of treatment or the ultimate results in the increase of livestock carried or hay produced, and the consequent increase in cash returns. The mere demonstration of the botanical changes due to the physical and chemical results of treatment may be quite sufficient as a preliminary demonstration in a laboratory, but it is of little use in a Show Pavilion. Of course, it is assumed that the financial results are as good as the botanical, but the efficient showman never leaves the spectator to make assumptions, but rather tells him everything possible. The worst example of this failure to realise the capacities even of the interested public was the exhibit of the Meteorological Office. This was much to be regretted, for the Meteorological Office had taken the trouble to gather local data for the demonstration of facts relating to weather conditions and crop production. Intelligently used, this data might have proved to be very interesting to northern farmers; but what is the ordinary farmer likely to make of charts on which these terms appear—"Line of mean rainfall," "Centre of gravity," "Line of regression," "Line of least scatter," "Standard of deviation"? Moreover, it was not very easy to obtain from the attendants on this exhibit any simpler explanation of the facts, and the attitude of the majority of the people who just looked at it was clearly one either of amusement or mystification.

But while some criticisms of the exhibitors' methods may be made, it is also fair to say that there is often more scepticism, and suspicion of faddism on the part of exhibitors, in the minds of spectators than is always warranted. This was noticeable near the exhibit of the National Clean Milk Society, but it was pleasant to hear some of the spirited debates which were conducted round this exhibit. Again, the Clean Milk Society would have attained more success if they had been more concerned with the financial side of their campaign, and less with the purely scientific. A statement of the price requirements for clean milk —even an illustration of the price differentiation on qualities of milk in U.S.A.—would have saved the attendants some trouble and made the exhibit more valuable both to farmers and to the public.

The exhibit of prints showing the development of the Shorthorn breed of cattle—the property of Mr. W. Parlour—was of considerable interest and utility, particularly as it was on view in the district which may almost claim to be the cradle of the breed. Such a collection should always be available to the public, and if good reproductions could be got they would be valuable in all schools and colleges where the history of breeds of cattle is studied or taught.

The chief exhibits were provided by Armstrong College, Leeds University, Rothamsted Experimental Station, Research Institute in Dairying at Reading, Cumberland & Westmorland Farm School, and the Education Authorities of the North Riding of Yorkshire, Durham, Northumberland, Westmorland and Cumberland. Others have already been mentioned, but the exhibits of the Women's Institutes must not be passed without notice. The interest taken by all classes of spectators in the exhibits of manual work and displays of studies made in rural schools indicated the appreciation of this work in the North of England. But an examination of these exhibits showed some conflict of aims on the part of teachers and others concerned with their production. A north-country schoolmaster was strongly of opinion that the proper object was to " make kids not cabbages," and this ultimate aim must not be lost sight of in the acquisition of any mechanical proficiency.

Considerations of space preclude the possibility of the full treatment which the whole of the exhibit deserves, but it appears desirable to attempt to indicate how, as it seems, improvements might be made in this valuable section of the Society's Show. The exhibits as a whole were excellent, but many of them might have been more effective for the purpose in view.

As at the Cardiff Show in 1919 the exhibitors had the advantage of Mr. J L. Luddington's stewardship.

THE FORESTRY EXHIBITION AT THE DARLINGTON SHOW, 1920.

The Forestry Exhibition at Darlington held in conjunction with the Royal Agricultural Society's Show was, from an educational standpoint, quite up to the standard of previous years, although perhaps the entries were not so numerous as formerly. The variety and quality of the different exhibits bore excellent testimony to the enthusiasm which the exhibition created, and it is reasonable to assume that these shows are attaining a well deserved reputation.

Much interest was evinced by the fact that public bodies, such as the recently constituted Forestry Commission and the Manchester Waterworks Committee (Forestry Department) were Exhibitors. The advent of the former served to show that the Government is fully alive to the situation created by the recent abnormal felling of our woodlands, and that steps are being taken to render this country self-supporting in regard to timber, should the occasion again arise.

The stewards, Mr. C. Coltman-Rogers and Mr. M. C. Duchesne, are to be congratulated upon the excellent arrangement of the building and staging of the exhibits. The main building measured 180 ft. by 40 ft. and was divided into bay recesses, occupied chiefly by exhibition classes only. An annex measuring 180 ft. by 24 ft. in addition to the above, contained boards, specimens of creosoted sleepers and other heavy timbers.

In the exhibition classes, notably those for boards and planks, a large and representative entry was staged, the high merit of which was commented upon by the Judge, Mr. J. P. Robertson, and the following Awards were made:—

Class 1. For specimens of Oak, Elm, Ash and Beech Timber—Major J. A. Morrison was awarded the Silver Medal, and the Duke of Marlborough the Bronze Medal.

Class 2. Specimens of Larch, Spruce or Scots Pine Timber—Major J. A. Morrison gained the Silver Medal. The Trustees of Viscount Ridley were awarded a Bronze Medal, and the Manchester Corporation Waterworks Committee Highly Commended.

Class 3. Specimens of any sort of Hardwood or Broad Leaved Timber—Major J. A. Morrison was awarded the Silver Medal, and the Duke of Marlborough the Bronze Medal.

Class 4. Specimens of any sort of Coniferous Timber—The Manchester Corporation was awarded a Bronze Medal.

Class 5. Collection of Planks of Home-Grown Wood—Major J. A. Morrison's exhibit gained a Bronze Medal.

Class 6. Collection of Panels, Boards or other articles, grown and manufactured on exhibitor's estate—Major J. A. Morrison was awarded a Silver Medal for an exhibit of hurdles and baskets made by blind men from withes grown on the estate.

An excellent exhibit of field gates and hunting wickets was shown in the various classes, the Awards being as follows:—

Class 7. For the best Oak Field Gate for farm use, the Duke of Marlborough gained the Silver Medal and the Trustees of Viscount Ridley were awarded a Bronze Medal.

Class 8. For the best Field Gate for farm use of any Home Grown Timber—Lord Barnard gained a Silver Medal, and the Trustees of Viscount Ridley the Bronze Medal.

Class 9. For the best Hunting Wicket (self closing), made from Home-Grown Timber—Lord Barnard was awarded the Silver Medal. No other award was made in this class, but Viscount Ridley's exhibit was highly commended.

Class 11. Fencing from Home-Grown Wood not more than nine yards. Lord Barnard gained the Bronze Medal, the only award in this class.

In the exhibition classes which filled the main building a very instructive and representative collection of exhibits was staged, embracing all branches of Forestry, both practical and theoretical. The chief exhibit in this section was that of the Forestry Commission, which occupied four bays, and was awarded the Special Medal for the best general collection, the purpose of the exhibit being to show the various stages of tree growth from the seed to the mature timber, and the conversion thereof; special reference being made to pitwood and how much of our home-grown inferior hardwood and coniferous timber could be utilised for this purpose.

The dangers which attend the rearing of young plantations were fully demonstrated by the collections of insects and fungi, together with specimens of the damage caused by these agencies. Specimens of tree damage caused by mammals, birds, frost, snow, &c., were also displayed.

Much attention was attracted by specimens treated with preservatives and also untreated, no doubt being left in the mind of observers as to which was the more economical procedure to adopt.

Numerous photographs of woodlands, &c., were distributed over the bays bearing upon the subject exhibited in each bay, these photographs giving the whole exhibit a very pleasing effect, and the award of the Special Medal was well merited.

The English Forestry Association displayed a splendid collection of Home Grown Timber, converted to show the superior use to which timber can be put. Some beautiful samples of British Oak were on view in the shape of panelling, parquet flooring, trays, dado rail, &c., whilst Ash was shown to advantage for motor building. Other specimens included Beech, Elm, Poplar, Scots Pine, Silver Fir, Cedar of Lebanon, Spruce and Douglas Fir, all of these timbers being representative of some part of the wood worker's craft. The Association was awarded the Silver Medal.

Mention must also be made of the exhibit of Mr. John Patten, jun., Alnwick, whose splendid and instructive exhibit of framed water-colour drawings earned well-merited approval, the exhibitor being awarded a Silver Medal. The drawings were from nature and showed from the earliest to the complete stage the flower and fruit of the Silver Fir, Beech, Larch, Holly, Mountain Ash, Alder, Western Plane, Montpelier Maple, Yew and Spanish Chestnut.

The exhibit of Mr. Joseph Harris, Brackenburgh Tower, included, in part, samples of Scots Pine in pots, illustrating germinative capacity of seed from different ages of trees, and grown on various soils, with an accompanying table showing conditions and results. Unfortunately, the pots containing this very instructive experiment were smashed in transit. The remaining portion of Mr. Harris's exhibit included a well thought out working and stock plan of his Woodlands. Altogether this excellent display proved a great source of interest, and was awarded a Silver Medal.

Mr. M. C. Archibald, Penrith, was awarded a Bronze Medal for a collection of fifty specimens of Home Grown Timber.

The Duke of Wellington also gained a Bronze Medal for an exhibition of insect, fungoid, and other damage to forest trees, and in addition displayed micrographs of various timbers, &c. There were also photographs illustrating Forestry operations and plantations in their various stages, together with a large number of polished specimens of timbers.

Messrs. Wellman Bros. & Co., Windsor, exhibited a number of Forestry Implements and Tools, the firm being awarded a Bronze Medal. The exhibit included a circular saw bench, 5 h.p. petrol engine, Planet hoe and cultivator, monkey jack, saws, axes, bill hooks, and other useful tools pertaining to Forestry.

For a very wide range of tool handles, cut from Home Grown Ash, Messrs. W. Shepherd & Sons, Kendal, were awarded a Bronze Medal. This firm (whose output is very considerable) showed how employment at home might be provided, and at the same time foreign competition fought, by proving conclusively that Home Grown Ash Wood shafts for Forestry tools, mining, and other purposes, compares favourably with American Hickory both financially and in durability, whilst assuring an excellent market to growers of Ash poles. The exhibits were such as are used in railway work, collieries, engineering, shipbuilding, &c., the class of timber required for the work being plantation or coppice grown ash of 8 in. to 12 in. quarter girth, and for the small handles, ash from 4 in. to 6 in. quarter girth is generally used.

Messrs. Calder, Ltd., London, displayed a large assortment of creosoted fencing, gates, mining timber, and railway timber, among which was a crossing sleeper of Douglas Fir, grown in Scotland, which measured 20 ft. by 14 in. by 7 in. What attracted a considerable amount of attention was a portable pigstye which could be easily moved by horse. The floor of the pigstye was made of two beech blocks which had the advantage of warmth and easy cleansing Messrs Calder's exhibit was awarded a Bronze Medal.

Mr. Maughan, Middleham, exhibited a Calliper Measurer which was awarded a Bronze Medal. With this instrument the diameter of a tree may be ascertained at about fifteen feet from the ground, thus reducing the factor of error and giving a more reliable estimate of the contents than if the measurement was taken at breast height. This exhibit was much welcomed in view of the fact that the Society is desirous of encouraging inventions which will facilitate woodland work and management.

Messrs. Little & Ballantyne gave a most excellent display of ornamental trees and shrubs, amongst which were good specimens of *Tsuga hookeriana, Cupressus lawsoniana, Abies veitchii, Picea pungens, Abies concolor, Pinus cembra,* and others. For this exhibit a Bronze Medal was awarded.

In conclusion, it was generally agreed that this section of the Show was very successful, not only in promoting further knowledge to those immediately interested, but also by drawing the attention of the general public to the importance of the educational and commercial value of Forestry in this country.

R. W. HUNTER.
J. P. ROBERTSON (*Judge*).

REPORT OF THE JUDGES ON THE PLANTATIONS AND ESTATE NURSERIES COMPETITIONS, 1920

THE competitions were confined this year to the counties of Durham, Northumberland, Westmorland, Cumberland and the North Riding of Yorkshire. The total number of entries in the Plantations competition was 26 and in the Estate Nurseries competition 6. An analysis shows that in the two competitions there were eight entries in Durham, eleven in Northumberland, none in Westmorland, six in Cumberland and seven in the North Riding. The distribution amongst the classes is given in the following table :—

Owner.	County.	Number of Entries in Classes.						
		1 & 2	3	4	5	6	7	Nurseries
Earl of Durham . .	Durham . .	—	1	—	—	—	—	1
Viscount Boyne . .	,, . .	—	—	—	—	2	—	—
Lord Barnard. . .	,, .	—	1	1	—	—	1	1
Col. G. F. T. Leather	Northumberland	—	1	—	1	1	1	1
Hon. W. H. C. Beaumont	,,	—	1	1	—	1	-	-
Duke of Northumberland . . .	,,	—	—	—	2	—	-	1
Manchester Corporation	Cumberland .	—	1	—	—	—		1
Mr. Joseph Harris .	,,	-	1	—	1	—	1	1
Mr W. L. Christie	N. Riding Yorks	—	2	2	1	2	—	
Totals		—	8	4	5	6	3	6

When one considers the large area covered by the Show and the number of woodland estates in the district, one cannot but feel somewhat disappointed with the comparatively small number of entries. The effects of the War upon the woodlands of the country are naturally still apparent, but it would appear that there may possibly be other factors acting as a deterrent to potential exhibitors We think these arise mostly through misunderstandings and perhaps mention of them may help to dispose of them.

There is some evidence that small estates consider themselves handicapped when entering into competition with larger ones.

We submit that this is quite unfounded as the past history of the competitions shows that small estates have been prizewinners at least as frequently as large ones and, furthermore, the smallness of the area eligible for entry in most classes is expressly designed to attract small as well as large properties.

In some cases it has been stated that, owing to the War, the woods had been neglected and entries were out of the question. It scarcely seems necessary to reply that the state of rides and paths is not a determining factor in the quality of a plantation but the method and results of management.

Another factor was the influence of competitions to be held in the future. It should be noted that under the present regulations only prize-winning plantations are ineligible for entry in future competitions *if shown in the same stage.* As many of the faster-growing species pass rapidly from one stage to another only a small number are affected by the disqualification.

In turning to the various classes we note that, as in last year's competition, there were no entries in the Hardwood Classes, Nos. 1 and 2. We think the term "Hardwoods as final crop" is somewhat misunderstood and would point out that it includes all plantations established with a view to obtaining a hardwood crop in the end. This naturally embraces plantations of either pure hardwoods or mixed hardwoods and conifers with the latter species as nurses. At the same time we think entries in these classes might be obtained by recognising the fact that hardwoods are likely in future to be grown in smaller proportions in mixtures. This would entail an enlargement of the scope of the classes, and we suggest that the case might be met by extending Class 2 so as to embrace "Hardwood or mixed hardwood and conifer plantations in Stage B."

Secondly, we note that in Class 4 there were only four entries, an evidence of war fellings which can only be remedied in the course of years. We should like to remark, however, that there is still some misunderstanding as regards the limits implied by Stage A and Stage B. We have acted on the principle that plantations in Stage A have only been "cleaned" and that they have not yet reached the state when a thinning with a view to obtaining increased production is culturally desirable. As soon as this thinning is made it becomes Stage B and remains in that class until the completion of the second thinnings. In other words, the operations implied in Stage A consist merely of removing those trees which have been crowded out so as no longer to constitute part of the crop, whereas in Stage B the operations implied are the removal of trees forming part of the crop which interfere with the proper development of better neighbours.

Perhaps it is rather early yet to expect more than five entries in Class 5, but we would have liked to see more schemes of improvement entered even if they have only been recently put into operation or just drawn up. This class should be most helpful to landowners, for, if nothing else, the scheme would be examined closely and commented upon and a second opinion would be gained. The old maxim "Two heads are better than one" still holds good.

In Class 6 the entries were not numerically representative of the extensive planting of such trees as Douglas fir, Japanese larch, Sitka spruce and Corsican pine during the last 10 to 15 years.

The increase in the number of nurseries entered as compared with last year was gratifying, for it gives a clear indication that planting is being or is about to be resumed.

We have laboured the question of the number of entries and have analysed the position closely in order, firstly, to clear up what appear to be misapprehensions and doubts, and secondly, to try to discover means of increasing the sphere of influence of these competitions. It is readily admitted on all sides that the competitions do succeed in their object of encouraging forestry. We would, however, like to see them fulfil a wider function than this. With the effects of the War, in the clearing of large quantities of timber, and the knowledge of the vital importance of timber to the State in time of emergency, still fresh in the mind of the public, more interest is gradually being taken in forestry matters than hitherto, although still to a comparatively insignificant degree. The next few years will be really important ones in the history of forestry in the British Isles and may easily make or mar future prospects, so that it is highly important to create an atmosphere for the favourable reception of means for the creation of large reserves of timber, both in the minds of landowners and the general public. A larger entry of plantations in the competitions held in connection with the Royal Show would undeniably create greater interest amongst owners, and we suggest the following plan to secure more numerous entries. In the area covered by the Show a local committee of enthusiastic members of the Royal English Arboricultural Society and others should be formed, each member of which would voluntarily consult with all the estates in his neighbourhood, and where permitted see what on each estate is considered worth entering and make suggestions to the owners or their representatives. There would then be no fear of any estate remaining ignorant of the competitions or of any plantation of more than passing interest remaining unknown. Often plantations are not entered, not through lack of interest, but because they are thought not to be of sufficient merit. In such cases the point of view of an outsider may be entirely different, for familiarity frequently makes one blind to the good points. Further, we would like to see a keen rivalry between the different areas affected by the annual Show as to which can produce the largest number of entries of good class, and we think the formation of local committees would help to secure this.

As far as the general public is concerned. we feel that these competitions might perhaps receive more generous notice in the public Press, which at present consists mostly of a bare announcement of the results.

DESCRIPTION OF PLANTATIONS, ESTATES AND NURSERIES.

In Class 3 there were eight entries for plantations of conifers which have been weeded or lightly thinned, including the removal of dead or dying trees, of not less than ten years' growth and not less than four acres in extent.

The Silver Medal was awarded to the Manchester Corporation for the Armboth Low Banks and Round Mount Plantation situated on the western side of Thirlmere Lake, Cumberland, consisting of about ninety acres. The natural features are:—

Soil. 6–18 in. light loam overlying shale.

Aspect, east. Slope, steep. Elevation, 600–1,300 feet above sea-level. Rainfall, 90 in. per annum.

Vegetation, bracken and coarse grass, with mosses and rushes in the wet places, on the lower and ling on the upper elevations. Part of the ground consists of bare outcrop and screes.

Species: about 5 acres Oregon Douglas fir from 600 to 700 feet elevation, Scots pine in shallow soil, Norway spruce in wet places, whilst European larch with a small percentage of beech is the major species. Age—12 years.

The five acres carrying Oregon Douglas fir is by far the best portion of the plantation. The trees were planted on the leeward side of a belt of old trees and the effect of the latter as a protection is most marked. Those nearest the belt (at the south end) average 26 ft. high by 3¾ in. quarter girth at 5 ft. up, whilst the largest measure up to 32 ft. high and 5 in. quarter girth at 5 ft. At the north end of the block, where the trees were beyond the effect of the shelter, the average dimensions are 22 ft. high by 2¾ in. quarter girth at 5 feet. Complete canopy has been formed and all ground vegetation has been killed, but, as is almost invariable with this species, the trees are very irregular in size. The European larch on the lowest portions of the slope have also become well established, closed up and have killed the ground vegetation, and in some portions are not much inferior to the northern end of the Douglas fir, the best tree noticed being 28 ft. high with a quarter girth of 3½ in. at 5 feet. On passing up the slope the heights of the trees begin gradually to diminish, but at 1,300 ft. the larch, where they occur, are not much more than bushes At this elevation Norway spruce is now getting away, for during the last 3 years trees had put on an average of 18 in. per annum in height, and have now reached the height of the larch, with every appearance of rapidly surpassing them in the near future. Scots pine appears to be the only tree to have grown to any extent on the drier portions of the ground. On the lower elevations and in the best places its height is some 6 ft. less than the average for larch in adjoining plots. Where an occasional Corsican pine is found, it is noticeable that it gives very little if any better height growth than the Scots pine. No insect pest has been observed, and apart from slight visitations of larch canker the plantation is very healthy.

The five acres of Douglas fir was entered as a separate plantation in Class 6, but as it is only a portion of the whole block it was transferred to Class 3. This area was also awarded the Gold Medal of the Royal English Arboricultural Society for the best plantation exhibited in this year's show.

The Bronze Medal was awarded to Mr. W. L. Christie, Jervaulx Abbey, Middleham, N. Riding, for compartments C and C1 of East Hills woods on Witton Fell. The plantation consists of 3½ acres Japanese larch, planted 1901, and 8 acres of mixed European larch and Scots pine, planted 1902. Soil, light loam and gravel above Millstone Grit—formerly arable. The aspect is north, elevation 825–875 ft., average rainfall 40 in. per annum. The Japanese larch were pitted as one-year one-year transplants at 4 ft. apart and did not need beating up. The trees on the upper portion have grown very well and average 33 ft. high with 3½ in. quarter girth; the ground is well covered, has a good thickness of humus and vegetation. On the lower portion growth is not so good, the average height being 29 ft. and quarter girth 3¼ in.; whilst the canopy is less dense, grass is coming in; the trees are less well developed and there are many whips present. There are indications here of some disease or injury to the Japanese larch which, although not appearing to be larch canker, needs further investigation. The portion 8 acres of mixed European larch and Scots pine are planted alongside the Japanese larch and the average dimensions of the three species are Japanese larch 29 ft. high, 3¼ in. quarter girth, European larch 27 ft. high, 3½ in. quarter girth, and Scots pine 24 ft. high, 3¼ in. quarter girth. The European larch here are comparatively free from canker, and Mr. Maughan claims that the mixture of some other species with the larch must be held responsible for this desirable feature. This plantation was entered in Class 4, but as nothing more than cleaning and pruning has been carried out, it was transferred to Class 3.

In Class 4, for conifers from Stage A to the completion of the second thinnings, there were four entries.

The First Prize was awarded to Lord Barnard, Raby Castle, Staindrop, Durham, for Carr's Plantation near Selaby Hall, which is situated at 350 ft. elevation with north and south aspects on very gently sloping ground, with a soil of strong loam on clay. It consists of 8¾ acres of European larch with a very occasional tree of Scots pine and Norway spruce, is 38 years of age and was notch planted at 4 ft. apart as two year-two year transplants. The quality of the crop and the rate of growth vary, the average height for the whole plantation was estimated at 42 ft., ranging from 35 ft. on the lower side to 50–52 ft. on the upper and best portion, whilst the average yield was computed at 2,400 cubic ft. per acre. The trees are well grown and the crowns are restricted to about the top 12 ft. of the tree. The thinnings have been somewhat interfered with by the presence of a few dead trees in patches—doubtless due to the wet condition of the heavy soil—and as a result there are small gaps. The soil surface is now beginning to deteriorate, as is shown by the incursion of grass and other vegetation. There is a small amount of canker present, but this has been kept in check by removing diseased trees and burning the branches. The crop was established with a view to allowing it to grow until large timber size has been reached, but on account of the appearance of the dead trees—which were slightly "pumped" at the butts—some doubt has been felt as to the desirability of carrying out the first intentions. There are many fine large larch in adjacent plantations growing under precisely identical natural conditions, and they are said to come down perfectly sound, consequently we think there need be no fear of allowing the plantation to continue growing. It is suggested, however, that in view of the vegetation covering the soil it is desirable to thin somewhat heavily and underplant with Thuja gigantea, beech or silver fir.

The Second Prize was awarded to the Hon. W. H. C. Beaumont, Dilston Hall, Corbridge-on-Tyne, for Sandyford Plantation, Dukesfield, Hexham. This plantation was of pure Scots pine, 24½ acres in extent, planted 51 years ago at an elevation of about 700 ft. with a north aspect on a soil of sandy loam, with a little surface peat, overlying carboniferous limestone. The plants, two year-one year, were notched at 4½ ft. apart. The trees have evidently at some time suffered rather severely from snow damage, for many are forked. The stocking varies considerably; in one portion there were as many as 750 trees per acre, whilst in others as few as 400 trees. In the former the trees were for the most part well-grown with a total average height 40 ft., timber height of 30 ft. and quarter girth 5½ in over bark at 5 ft.

high. In the latter the individual trees, although of about the same height, were much rougher and averaged nearly double the volume. It was estimated that the average volume for the wood was about 2,400 cubic ft. under bark per acre. The whole plantation now needs a gradual thinning, for in the most densely stocked places there are many suppressed trees, and in the more open spaces some forked trees are interfering with the development of better neighbours. The conditions in this plantation, where the average rainfall is about 33 in. per annum, are typical of a wide district in the South Tyne Valley, where a number of mixed plantations of European larch, Scots pine and—in wet places—Norway spruce have been planted. Measurements taken in such plantations suggest that pure larch, with perhaps the introduction of a small percentage of beech, and the substitution of spruce in wet places, will be a more profitable crop than pure Scots pine or a mixture of larch and Scots pine. As the district is near a large coalfield the extra value of larch as pit-props will be appreciated.

Class 5.—The best example showing systematic management of existing woodland area, including the renovation and conversion of unprofitable wood into a profitable condition. In this class there were five entries and the Silver Medal was awarded to Mr. W. L. Christie, Jervaulx, for the scheme relating to Witton Fell, Grey Yaud and Ramshaw Quarry areas covering a total of 379 acres. Planting was first commenced on Witton Fell in 1815 and progressed until the whole of the original area of 242 acres was completed. The species planted were Scots pine, larch, spruce, oak, ash, beech and elm. In 1896 a scheme of regeneration was begun and by 1914, when operations were checked by the War, 58 acres had been cleared and replanted and an additional 11 acres of new ground had been brought in, making the total area under new plantations 69 acres. During the War 123 acres of mature timber were cleared, the greater part of which will be replanted, and 40 acres of new ground will be added. The area stocked with mature timber at the present time is 70 acres. The soil varies from a more or less thin sand with peat on the high ground to clays and sandy loams on the slopes with light loams on the lower ground. The whole rests principally upon Millstone Grit, which outcrops to the north, but the lower ground contains bands of shales and limestone of lower carboniferous age. The altitude varies from 675 to 1,125 ft. O.D., all aspects are represented and the average rainfall is about 40 in. per annum. The mature crop of 100 years and over was very thin on the ground, but measurements provided by Mr. Maughan showed clearly that on all aspects and on all the different classes of soils at altitudes varying from 900 to 1,150 ft. larch produced much more timber than spruce, and both in turn gave larger yields than Scots pine. Numerous measurements of trees of the three species growing in mixture side by side tell us that if the average yield of larch is taken as 100 that of spruce was 64, and Scots pine 50. Under the scheme, which is eloquent testimony of much thought and careful study of local conditions, the area is subdivided into conveniently sized blocks or compartments. Due consideration is given to the question of shelter by standing timber to newly formed plantations, and to the necessity for a well-defined series of extraction rides. The species first planted were European larch, Scots pine, spruce and some hardwoods in appropriate conditions, but in late years Douglas fir, Sitka spruce, Japanese larch and Corsican pine have been used. The trees of the latter group of species are generally characterised by an all-round superiority over the older established ones. In one compartment pure blocks of Japanese larch, Sitka spruce and Douglas fir were planted in 1912 at an elevation varying from 1,000 to 1,080 ft. In all cases the canopy is good and complete. The Japanese larch, with an average of 15ft. in height, is the most successful but only slightly better than the Sitka spruce, whilst in the case of the Douglas fir, although there are many trees 15 ft. or more in height, the exposure has had a general retarding effect upon growth. At a little higher elevation and on thin soil a block of Corsican pine planted 3 ft. 6 in. apart is doing well, but is not as good as the other species. In the "sixteen-acre plantation" hardwoods were planted with conifer nurses in 1899–1901 at 4 ft. 6 in. apart on a light loam of good quality at 800–850 ft. O.D. Rabbits cleared many of the hardwoods, but there is still a considerable number of oak, ash and sycamore which have competed well with the conifers and are very clean. The hardwoods should be allowed more room at once or they will become completely suppressed. The Grey Yaud and Ramshaw Quarry area consisting of 76 acres is linked up with Witton Fell and was formerly mostly old woodland. It was cleared, and in 1891 replanting commenced, the whole area being completed in 1898. The species employed were mainly European larch, Scots pine and Norway spruce partly pure and partly in mixture. One compartment of 5¼ acres is composed of pure blocks of Scots pine and Norway spruce on sandy loam overlying Millstone Grit, standing at 750 to 950 ft. elevation on a slope with a northern aspect. The trees were pitted 22 years ago, following an old crop of Scots pine and larch, at a distance of 3 ft. apart. In 1912 the average height of both species was 16 ft., but during the last eight years Scots pine has made more height growth than spruce, the average measurements being 29½ ft. and 26 ft. respectively. The former showed also a greater quarter girth measure with an average of 3¼ in. as against 2¾ in. in the case of spruce. Immediately above this plot was a block of Corsican pine in a most exposed position; here the trees are growing at about the same rate as the Scots pine, but are more even in size, less damaged by wind and snow and have formed a complete canopy. The Scots pine now needs thinning, but if all the suppressed and the worst of the forked trees are removed there will be some considerable gaps caused in the stand. In view of the excellent growth of Douglas fir under the conditions, we consider the best course would be to thin somewhat heavily and underplant with that species.

The Second Prize was awarded to Col. G. F. T. Leather, Middleton Hall, Belford, Northumberland, for his scheme relating to Detchant Wood. In this case also the scheme has been very carefully considered from all points of view, but as its operation only dates from 1902 we considered that the Jervaulx scheme was superior in being able to show results over a longer period of years. Detchant Wood, including new ground taken in recently, covers an area of 335 acres and has always been a wood so far as can be ascertained. In 1902 the present owner found that it was practically derelict and that spasmodic attempts at clearing and replanting had not been very successful. Accordingly it was determined to clear the wood systematically from east to west, against the prevailing winds, and replant. Rabbits caused havoc in the first blocks to be replanted, but after the whole was fenced with netting and stringent measures were adopted there was an improvement. Up to the outbreak of war about 90 acres had been felled and replanted. The soil varies between loam and clay, which is mostly derived from "Whinstone." The elevation varies from 150 ft. to 500 ft. above sea-level, the general aspect is north-east, and more or less sheltered. The climate is not severe and the rainfall averages about 23 in. per annum. All species of conifers thrive, especially Douglas fir, whilst ash also produces good timber and seeds itself freely. One plantation, formed in 1902 with larch and scots pine, did not take well, was underplanted six years later with Douglas fir and now provides a useful example of the value of underplanting.

The scheme describes the work done in the wood up to the present time and details the operations to be carried out up to the year 1926–27. We would like to suggest that perhaps some improvement might be made if the rides are straightened out during the course of replanting and the compartments made rather more uniform in size. There, are numerous ash seedlings, but many of these have become deformed by frost, rabbits or other influences, and we think they could be improved if they were cut back to the ground level and the best shoot of each selected after a year or two of growth.

We were able in this class to commend highly the scheme submitted by Mr. Joseph Harris, Brackenburgh Tower, Carlisle, for dealing with Lazonby Fell. This area consists of 245 acres, of which the old woodland of 80–90 years old Scots pine and larch covers 66 acres and the remainder, excepting 2 acres of nursery, comprises plantations from 12 years of age downwards. This scheme, like the two preceding ones, was accompanied by coloured plans showing the progress and intended extent of the operations of felling and replanting. Provisions are made for the completion of the felling of the remainder of the old wood and replanting during the next 10 years. The vegetation has been the guiding factor in the choice of species, and on the light loam derived from Permian Sandstone the following choice appeared to be justified by results : larch where strong bracken occurred, Douglas fir where the bracken was not so strong and became mixed with ling and grasses, Sitka spruce in wet rush-abounding places, Corsican pine and the erect variety of Mountain pine on rock outcrops with little or no vegetation.

Class 6.—Plantation of not less than two acres of any of the rarer conifers, pure or mixed, of not less than five nor more than 30 years' growth. There were six entries in this class.

The Silver Medal was awarded to Mr. W. L. Christie, Jervaulx Abbey, for 3¾ acres—compartment A—in the Thirsting Castle working section of the woods. It is situated at an elevation of 650–750 ft., with a north aspect, on a light loamy soil above Millstone Grit, the rainfall being about 40 in. per annum. The species present are Oregon Douglas fir, Colorado Douglas fir and Sitka spruce in pure blocks, which were pitted 4 ft. 6 in. apart in 1910. Throughout the blocks of conifers the ground is completely covered and there is no surface vegetation whatever. The heights of the trees are :—

	Best Tree	Average Tree.
Oregon Douglas fir . . .	34 ft.	24 ft.
Colorado Douglas fir . .	19 ft.	10 ft.
Sitka spruce	24½ ft.	20 ft.

The situation is a sheltered one, so we find no damage due to wind, but the Oregon Douglas are in many cases much bent by snow, whereas the Colorado Douglas and Sitka spruce have not been affected in that way. We consider the damage is due to the Oregon Douglas having been planted too closely, and that a gradual thinning will remove risks of further damage, whilst future plantations might with advantage be planted at say about 5½ ft. apart. The Oregon Douglas vary very much in girth, whereas the Colorado Douglas were less variable and the Sitka spruce were most uniform. This plantation provides conclusive evidence of the inferiority of the Colorado (Blue) Douglas as compared with the Oregon (Green) Douglas. The growth of

Sitka spruce is particularly interesting on account of the dryness of the soil, derived as it is from the Millstone Grit formation. We consider that this species is much more suitable for such soils and conditions than are any of the pines which are usually planted thereon.

The Bronze Medal was awarded to Col. G. F. T. Leather, Middleton Hall, for a plantation of 7 acres in Detchant Wood. It was originally planted in 1891, but was much eaten by rabbits and hares, and in 1913 it was finally replanted as a pure Douglas fir crop at 4 ft. apart by pitting. The trees have grown very well, have completely covered the ground, forming a dense canopy and killed all the vegetation. During the last two years they have made a height growth of 4–5 ft. each year and are now averaging about 15 ft. high, whilst the best measure as much as 20 ft. high and 12 in. girth, in 7 years. One or two of the originally planted trees—larch, Scots pine and hardwoods—are still standing; they are not good specimens, never likely to make good timber and are beginning to affect the Douglas around them. It is always best in such cases to remove the older trees at the beginning and make a fresh start.

Class 7.—For the best-managed woodland estate, not less than 1,000 acres in area, the judges to take into account the production of timber, ornamental planting, planting for sporting purposes, and the improvement of residential amenities and proper management of hedgerow timber. There were three entries.

The Special Medal was awarded to the estate of Col. G. F. T. Leather, Middleton Hall, Belford. The estate consists of 5,150 acres including 574 acres of woodland, in which the ruling soil, climatic and other natural conditions are much the same as those described for Detchant Wood in Class 5. The timber produced on the estate consists of most species of both hardwoods and conifers, but in addition to the usual trees found on most properties there are to be found good-size trees of Thuja gigantea, silver fir and black Italian poplar growing under woodland conditions. The woodlands on the estate are of all ages and consist mainly of conifers, either pure or mixed. It is scarcely ever necessary to plant hardwoods since they regenerate themselves very freely; ash is almost a weed throughout, so freely does it seed itself, and everywhere the trees of this species are encouraged as the value of its timber is fully recognised. Of late years the more recently introduced exotic conifers have been mostly planted and are succeeding generally. Thuja gigantea surprised us most in growing remarkably well on an average dry soil with such a low average rainfall as 23 in. per annum; the larger specimens in the woods were well cleaned, and we may note in passing that on a neighbouring estate this species grown pure has cleaned itself certainly much better than Douglas fir is in the habit of doing. Silver fir is also very healthy and a rapid grower and produces an abundance of natural seedlings. The woods are very free from diseases and pests, almost the only one of any importance being the universal larch canker. From a forestry point of view the estate is eloquent of the interest and energy displayed. Old unprofitable woods are being rapidly cleared with a view to replanting, on the lines described in Class 5. Heavy fellings were in progress at the time of our visit, and in addition to the permanent sawmill, a temporary one is installed in the woods. A light railway connects the woods with the mills for the sole purpose of extracting timber, a petrol locomotive is used for hauling trucks and is stated to be much cheaper than the usual form of horse traction. In addition to the commercial woods, there are numerous shelter and ornamental woods and belts, all of which are treated for the end in view and are kept well thinned with the object of obtaining the maximum yield of timber as well as shelter, game cover and ornament. Although timber is the primary object the general effect is also amply secured, and when such a wood becomes ripe for felling it is gradually removed and replanted. In the park there are numerous handsome specimen trees of a more ornamental nature, and we found many natural seedlings of Douglas fir, Cupressus Lawsoniana and Abies nobilis, as well as of other species already noted. The appearance of these is undoubtedly due largely to the strict policy of keeping down the rabbits, which was adopted some years ago and is still maintained. There are two small nurseries, 1½ acres and 1 acre respectively, in which bought seedlings are lined out in preparation for planting later. The sites are to be changed next year and the area under nursery increased. In the estate yard is an up-to-date sawmill driven by a suction gas-engine, which consumes sawdust and other wood waste solely as fuel. In addition there are carpenters' and joiners' shops fitted with the most modern woodworking plant. All the timber used for fences, gates, buildings, etc., on the estate is home grown, and we noted that the roof of a new workshop consisted of boards of Abies nobilis underlying tiles. In the well-arranged drying sheds is a large collection of seasoned and drying planks of all species. The equipment is completed with a modern pressure creosoting plant. We were much impressed by the business-like manner in which the woods branch of the estate is managed and with the excellent results achieved by the application of the principles of sound forestry combined with intensive utilisation. The energy and foresight displayed are not, however, confined to the existing woods, for a considerable area of new ground has been recently fenced in with a view to planting.

The Silver Medal was awarded to the Raby Castle Estate of Major Rt. Hon. the Lord Barnard, M.C. The total area of the estate is 22,621 acres, of which 2,085 acres are woodlands ranging from 1 to 200 years of age. The soils of the woodlands vary from poor sandy loam to clayey loam overlying clay, gravel or sand. The elevation ranges from 200 ft. to 1,000 ft. above sea-level, the climate is not severe and the average yearly rainfall is about 33½ in. The two principal woods on the estate are North Wood, 225 acres, and Great Wood, 81 acres in extent. About two-thirds of North Wood is old wood, planted in 1740, consisting mostly of beech with other hardwoods and some conifers. The whole wood was planted about this time, but one-third has been cleared and replanted since 1857 and part is in process of being cleared at the present time. The old timber is over mature, and, in fact, depreciating, but whereas too early and heavy thinning is indicated, there is some very fine old timber still standing. Principally the lack of demand for old beech has seriously affected the clearing and replanting of the area. In the more recently planted sections a mixture of conifers and hardwoods is largely employed, but the presence of large numbers of rabbits is very prejudicial to success. The Great Wood still contains a small portion of 190 years old mixed hardwoods, but the majority has been cleared and replanted gradually since 1857 under a defined scheme. Here, as generally throughout the woodlands on the estate, the object is to secure a final crop of hardwoods after nursing with conifers. The system used is to plant two rows of conifer with one row of hardwood, the conifers being notched and the hardwoods pitted at 4 ft. apart in and between the rows. Some black Italian poplar has recently been planted in clumps with conifer; this tree also occurs in various ages in many of the woods and the timber is of good quality. The main woods on the estate occupy very prominent positions on high ground surrounding the castle, and *en masse* form a very picturesque combination as well as providing very efficient shelter for grazing land. In addition there are a number of semi-ornamental woods nearer home which consist mostly of very large beech of great age. Portions of these woods have from time to time been cleared and replanted, but here again the numerous rabbits influence both the success and the treatment of the plantations. In the ornamental woods are large numbers of very fine specimens of the commoner species and portions of the plantations are preserved for their great beauty. The estate nursery extends over four acres of ground, with a soil varying from loam to clay loam. Here are raised both seedlings and transplants for estate purposes, much of the work being carried out with success during recent years by women. The permanent sawmill is well equipped and adjoining are carpenters' shops and seasoning sheds. Considerable quantities of home-grown timber are consumed in the construction of buildings, gates, fences and for other estate purposes.

The Bronze Medal was awarded to the estate of Mr. Joseph Harris, Brackenburgh Tower, Carlisle. The area of the estate excluding moorland is 3,578 acres and of the woodlands about 660 acres. The latter are situated partly on a dry sandy loam and partly on clay overlying carboniferous limestone. In the former case conifers, with a slight percentage of beech, compose the woods, whereas on the stiffer soils are found mixtures of conifers with a large proportion of hardwoods. The most successful species is undoubtedly the European larch, which at least maintains as good a rate of growth as the Japanese larch and Douglas fir. The game, ornamental and shelter plantations occur mostly on the heavier soil, where the quickest-growing species are wych-elm, alder and ash. The mixtures now require very careful treatment in order to preserve the more valuable hardwoods, and it is suggested that a series of gradual thinnings is advisable, to be followed by underplanting with silver fir, beech or Thuja according to the soil. The underplanting will also provide cover for game, which cover is generally somewhat deficient. A considerable amount of timber, chiefly oak and ash, is cut from the hedges and sawn into plank for home use or for sale. There are three nurseries on the estate; these are referred to in the next class. Two temporary sawmills belonging to the estate have been working here for some years, but there is no permanent mill and no creosoting plant. The timber is mainly used for private purposes, but quantities are also sold, and in conversion the fullest use is made of the timber.

Estate Nurseries.—In this class there were six entries for the best-managed general estate nursery.

The First Prize was awarded to Mr. J. Harris, Brackenburgh Tower, Carlisle, for his three nurseries, totalling 3 acres in all. The largest is situated on light dry sandy soil at an elevation of 750 to 800ft. with a south-west aspect. The second nursery of ⅔ acre is situated on stiff clay soil at an elevation of nearly 600 ft., on level ground; whilst the third has a strong loam soil at an elevation of 420 ft., and although facing west is well protected by high walls. The results obtained at all nurseries are very good, and, excepting a portion of the largest which was under treatment for cockchafer grub by spreading gas-lime, were well stocked at the time of our visit.

The most successful beds were those containing 180,000 seedling ash which, if anything, were rather too thick on the ground, 56,000 Corsican pine two-year seedlings, 76,000 Japanese larch one-year seedlings and fifteen beds of European larch containing 95,000 two-year seedlings. In the lines the best batches were of 20,000 one year-one year ash, and 64,000 Scots pine one year-one year from 2 lb. of seed. All the work is carried out as economically as possible so long as efficiency is not sacrificed. Seeds of as many species of trees as exist on the estate, both of hardwoods and conifers, are collected at home at a very low cost, whilst natural seedlings are collected from the woods and lined out in the nurseries. The average cost of preparing the beds by digging one spit, levelling, sowing and top rolling is *5d.* per sq. yd. As an example of the cost of transplanting we may cite the case of the 64,000 Scots pine which were lined out as one-year seedlings by 4 men and 3 boys with a planting board at the rate of 14,000 per day at a cost of 2*s.* 10*d.* per 1,000. The cost of the plants here are by far the lightest we met with anywhere and, for plants ready to go out into the woods, were stated to be :—two-year two-year Scots pine 11*s.* 3*d.*, two-year one-year European larch 16*s.* 8*d.*, two-year two-year Norway spruce 12*s.* 6*d.*, two-year two-year Corsican pine 12*s.* 7*d.* and ash one-year one-year 10*s.* per 1,000 plants ; the cost of seedlings was given as 4*s.* 11*d.* and 5*s.* 3*d.* for two-year seedlings of Scots pine and Corsican pine respectively, 11*s.* for two-year European larch and 5*s.* for two-year Norway spruce per 1,000 in each case. These costs include all labour and seed. The quality of the work in all branches was of a high standard. On the sandy soil no manure has been applied other than " green manure " obtained by turning in green lupins. In the other nurseries breaks are utilised for growing potatoes, which are manured in the ordinary way. The planning of the nurseries is strictly utilitarian, if somewhat severe, no space being taken up except by trees of economic value. All the plants used on the estate are raised in these nurseries direct from the seed-bed. The position of the nurseries is most convenient with reference to the respective soils of the estate woodlands.

The Second Prize was awarded to the Manchester Corporation for their nursery at Thirlmere which covers 4½ acres, on soil varying from sandy loam over gravel to clay loam, with west and south-west aspects, on slightly sloping ground at an elevation of about 550 ft. O.D. One portion of the nursery is confined to seed-beds in which are raised practically all the seedlings necessary for the estate. The remainder of the ground is used for transplants with the usual break, which in this nursery is cropped with turnips instead of with potatoes as is usually done. The soil is very stony and the lower portion is subject to inundation and frosts, but in spite of these drawbacks the ground was well cropped and, excepting some Norway spruce on the lower side, the plants were of a very good colour and shape. The work throughout was good, the planning excellent and, being in an exposed position, ample shelter in the form of beech and Cotoneaster hedges has been provided. The cost of the plants ready for planting out was given as: European larch 50*s*., Japanese larch 60*s*., Scots pine 40*s*., Norway spruce 50*s*. and Sitka spruce 60*s*. per 1,000.

In this class we were able to commend highly the nursery of the Earl of Durham, Lambton Castle, Fence Houses, Durham. It is 1½ acres in extent on an old garden site with a clay loam soil, at an elevation of 100 ft., having a South-east aspect. All the plants were bought in as seedlings and lined out in the nursery and were looking well. The cost of the plants ready for going out were given as: Scots pine 65*s*., Norway spruce 70*s*., European larch 80*s*., ash 60*s*., beech 100*s*., Corsican pine 100*s*., and oak 72*s*. per 1,000 plants. The quality of the work was good and the nursery was very well kept.

The prices given in the three cases provide strong evidence of the value of raising at home all plants required. It is increasingly becoming the custom to dispense with seed-beds in the estate nursery and to buy seedlings, largely on account of the poor germination that has been obtained in recent years. In spite of this, we are absolutely convinced that it is a great saving to raise one's own seedlings, both in cost and the reduction of losses due to transplanting. We admit that the successful raising of seedlings is an operation attended with many difficulties and is somewhat specialised; therefore we recommend that wherever possible one man should be detailed for this special work. Small estates will mostly consider it an extra expense that is not justified by the quantity of plants required; in such cases we strongly recommend the co-operation of neighbouring owners of woodlands for the establishment of a central seedling nursery, from which seedlings could be sent out to each individual estate for transplanting in its own nursery, each estate bearing a share of the cost in proportion to the quantity and class of seedlings received therefrom. In any district there is usually to be found at least one man who takes a special interest in seedlings and who is more successful than the majority in producing good seed-beds.

POINTS OF GENERAL INTEREST.

The most serious enemy of the woodlands on many of the estates visited was the rabbit. It is surely quite time that we all took to heart the lessons so dearly bought and either make up our minds to exterminate rabbits altogether or banish them from the woods to a warren.

During the last few years there has quite rightly been a call for a wider planting distance. The chief objects in view are: to reduce the number of plants used, to reduce the labour bill in planting and to save expense by eliminating the earliest thinnings which mostly yield material of little or no value. These are all very good reasons for adopting a wider planting distance, but we must not sacrifice the crop on the altar of economy. We must never lose sight of the fact that it is essential to secure a complete canopy at a reasonably early date in order to obtain good-quality timber and to preserve our soil by eradicating surface vegetation. This is of such primary importance that we may well use it as a guide to our planting distance. Taking all points of importance into account, we are of the opinion that a suitable distance apart would be one which under normal conditions for the area would produce a complete canopy in from 10 to 15 years from the time of planting, the shorter time referring to the best localities and the longer to poor localities, with variations between them. One can generally find examples of plantations under conditions similar to those where planting is proposed and the deduction becomes fairly simple.

In the matter of "beating up" failures we have in the past been far too diligent, we have looked too hard at the gaps caused by the deaths of single trees, whereas we ought to try to picture in our minds the probable condition of the plantation at say 15 to 20 years of age. Unless there is very considerable failure, say of the order of 20 per cent. or more, there is no need to spend considerable quantities of money in filling up—provided that the failures are not in patches, when, of course, some repairs will be necessary. We must not forget, however, that the wider the distance apart we plant so will the necessity for beating up in case of failures be more apparent.

Again, the work of cleaning in the first 3 or 4 years after planting has been carried out much more thoroughly than can be afforded in these days, and, in fact, much more so than is often even necessary. It is surprising how much apparent choking young plants of all species can withstand without undue harm, and so long as the leaders and tops of the plants are not covered over they will ordinarily push through. Instead of cleaning the ground like a garden it is ample merely to remove such weeds and vegetation that are actually harming the plants. In many cases, switching only the leading shoots of such plants as brambles and briars is often sufficient for the purpose.

Pruning is much resorted to in all parts of the country, and this is quite an expensive operation. There is a good deal to be said in favour of the pruning of persistent dead branches of such species as Douglas fir, but it is certainly not an essential forestry operation to prune every single tree in the plantation. If pruning is carried out at all, then in order to do it as cheaply as possible, only the best trees which are likely to form the final crop and possibly the latest of the thinnings should be treated; the smaller specimens which will obviously be removed long before maturity should be left untouched.

The method of planting to be adopted in any case should be closely considered. There are conflicting opinions as to the effect of the different methods—*e.g.* notching versus pitting—upon the ultimate crop, but whereas there is something to be said for both sides, the question of cost seems to us to dictate that in the case of conifers the method of pitting is absolutely out of date, by reason of the slowness of the operation and its consequent costliness. Conifers should be either notched or mattock-planted, and, whereas, quite large plants can be successfully used in this way, success is much more probable with smaller plants—in many cases, seedlings straight from the seed-bed can be used—and it suits all pockets better to use them. Only in very exceptional cases should conifers be pitted It is generally stated that hardwoods should be pitted and this method is probably universally employed; we would like, however, to see experiments carried out in notching hardwoods.

As a further step towards economy of working, we would recommend a much-increased use of "rough" or "forest" and "temporary" nurseries In this way much of the expensive permanent nursery work is obviated, the carting of plants is cheapened and, if such nurseries are established *pro tem.* on the area to be planted, there is every chance of increasing the success of the plantation from the very beginning.

In permanent nurseries we would like to see discarded altogether the old practice of allowing the worst plants of a batch to remain an extra year or two in the hope that they will have grown by the end of that period to a suitable size for planting out. As a general rule, weak nursery plants will retain that weakness throughout life, yielding a poor crop of timber and predisposing the trees to any pest or disease that may happen to come along. From all points of view such plants had better be burned when the main portion of the batch is moved out of the nursery.

Close consideration of such matters as have been outlined above may greatly assist in reducing the outlay on our woods and in producing better financial results and better crops of timber than perhaps have been obtained hitherto.

We take this opportunity of thanking Mr. Charles Coltman Rogers and Mr. Edward Davidson, who were responsible for the excellent arrangements for the tour, and also the gentlemen who kindly entertained us and provided cars for the purpose of visiting the exhibits.

W. R. Brown.
A. P. Long.

· REPORT OF THE COUNCIL TO THE ANNUAL GENERAL MEETING OF GOVERNORS AND MEMBERS OF THE SOCIETY,

HELD AT THE
ROYAL AGRICULTURAL HALL, ISLINGTON, LONDON, N.,
On WEDNESDAY, December 8, 1920, *at* 2.30 *p.m.*

Membership.

1. The Council have to report that the list of Governors and Members has undergone the following changes during the year which has elapsed since the Annual General Meeting on December 10, 1919: 43 new Governors (including 6 transferred from the list of Members under By-law 7), and 1,093 new Members have joined the Society, whilst the deaths of 6 Life Governors, 7 Governors, 106 Life Members, and 172 Members have been reported. A total of 37 Members have been struck off the books under By-law 12, owing to absence of addresses; 2 Governors and 145 Members under By-law 13, for arrears of subscription; and 1 Honorary Member and 156 Annual Members have resigned.

Deaths of Governors and Members.

2. By the death of Lord Moreton, the Society has lost one of its Trustees and an active member of the Council, who had filled almost every office connected with the Society's operations.

A resolution in the following terms was passed by the Council on March 3, and forwarded to Lady Moreton with an expression of the Society's sympathy and condolence:—

> "That the Council greatly regret the loss they have sustained by the death of Lord Moreton, who had been a member of the Council for forty years, and whose able assistance for so many years and on so many occasions had been of the greatest benefit to the Society and to the cause of agriculture generally."

3. It is with regret that the Council have also to record the death of Mr. Robert W. Hobbs, who, in consequence of failing health, resigned in May, 1919, after sixteen years' service on the Society's governing body, as the representative of Oxfordshire. Amongst other Governors and Members whose loss by death the Society has to deplore are the Earl of Londesborough (Governor), Lord Digby (Governor), Lord Egerton of Tatton (Governor),

Lord Glenconner, Lord Polwarth, Lord St. John, Lady Wantage (Governor), The Rt. Hon. Jesse Collings, Sir C. T. Dyke Acland, Bart., Sir John A. Brooke, Bart., Sir R. M. Brooke, Bart. (Governor), Sir H. J. Ellis-Nanney, Bart., Sir John Gilmour, Bart., Sir E. W. Greene, Bart., Sir W. F. G. Guise, Bart., Sir John C. Horsfall, Bart., Sir E. G. Loder, Bart., Sir H. B. Praed, Bart., Sir H. F. Vernon, Bart. (1863), Sir Lindsay Wood, Bart., Sir J. H. Maden (Life Governor), Sir John McLaren, K.B.E., Sir Henry M. Plowden, the Hon. H. W. Fitzwilliam, the Hon. James Dunsmuir (Life Governor), Col. the Hon. W Le Poer Trench, C.V.O. (Life Governor), Capt. H. L. Brackenbury, M.P., Mr. William Brooke (1856), Mr. E. Lovell Clare, Col. R. G. Cosby (1869), Mr. George Courtauld, Lt.-Col. G. Savile Foljambe, Mr. Italo Giglioli, Mr. A. C. Hall (Governor), Mr. F. Wilson Horsfall, Mr. F. H. Jennings, Lt.-Col. A. S. Jones, V.C., Mr. Edward Kendrick, Prof. E. Kinch, Mr. John Laverack, Mr. C. S. Mainwaring, Mr. John Malcolm, F.R.C.V.S. (Chief Veterinary Officer at the Society's Shows for many years), Mr. C. F. Marriner, Mr. G. T. Marriner, Mr. C. R. Moorsom-Mitchinson-Maude (Life Governor), Mr. Joseph Morton, Mr. F. E. Muntz (Governor), Mr. H. W. Palmer, Mr. J. C. Parr, and Mr. J. H. Stokes.

Number of Governors and Members on Register.

4. The above, and other changes, bring the total number of Governors and Members now on the Register to 11,801, divided as follows :—

249	Annual Governors ;
128	Life Governors ;
9,008	Annual Members ;
2,391	Life Members ;
25	Honorary Members ;

11,801 Total number of Governors and Members as against a total of 11,348 on the Register at the end of 1919.

Presidency.

5. Mr. R. M. Greaves, of Wern, Portmadoc, North Wales, Chairman of the Implement Committee and a Vice-President of the Society, who first joined the Council in 1900, is unanimously recommended for election at the Annual Meeting as President for the ensuing year.

Annual Election of Council.

6. The Members of Council who retire by rotation at the forthcoming Annual Meeting are those representing the following electoral districts of Group "A," viz. :—Northumberland,

Yorks. (North Riding), Lancashire and Isle of Man, Cheshire, Derby, Northampton, Norfolk, Bedford, Hertford, Middlesex, Stafford, Worcester, Monmouth, Cornwall, Dorset, Hampshire and Channel Islands, and Scotland. Members resident in these districts have been communicated with, and the necessary steps are being taken for the election or re-election of representatives for the divisions concerned.

Honorary Membership.

7. The Honorary Membership of the Society has been conferred on Monsieur Léon Boereboom, Director of Agricultural Reconstruction for Western Flanders, whose co-operation with the Agricultural Relief of Allies Committee in the distribution of live stock to farmers in the devastated areas of Belgium, has been of the greatest assistance to the Committee; and also on Mr. E. J. Powell, Secretary of the Smithfield Club and late Secretary of the Shorthorn Society, in recognition of his long and valuable services in the several spheres in which he has worked for upwards of 50 years.

Accounts.

8. In accordance with the By-laws, the balance-sheet has to be presented for consideration at the Annual General Meeting. The Council therefore beg to submit the balance-sheet for the year 1919, with the Statement of Ordinary Income and Expenditure. These accounts were published in Volume 80 of the Journal issued to Members this year, having been duly examined and certified as correct by the Auditors appointed by the members, and by the professional Accountants employed by the Society.

Concession to Live Stock Exhibitors.

9. Early in the year an intimation was received from the Railway Clearing House that they were unable to restore the facilities in practice before the war in connection with the conveyance of live stock to and from agricultural shows. The Council thereupon arranged for a deputation representative of agricultural and kindred societies to wait upon the Minister of Transport. It was emphasised by the Deputation that the increase in the charges for the conveyance by rail of live stock going to and coming from agricultural shows, combined with the withdrawal of the pre-war railway concessions to exhibitors, was having a detrimental effect on the sending of exhibits to shows and on the breeding of high-class stock generally. Sir Eric Geddes was impressed by the views put forward and undertook to make a Special Reference to the Rates Advisory Committee on the subject. Evidence on behalf

of the Society was given before this Committee by Mr. John Evens. Subsequently it was announced that the Minister of Transport had issued a direction to the railway companies that the concessions formerly granted in respect of the conveyance of live stock to and from agricultural shows were to be restored on and from May 17. These concessions provide that live stock returning from a show unsold is to be conveyed at half-rate, and that attendants accompanying the live stock to the show and the necessary provender for consumption on the journey, are to be conveyed free. The thanks of exhibitors are due to Mr. Evens for his efforts in this matter, and also to the Ministry of Agriculture for the support given to the societies in their application

Darlington Show.

10. In conjunction with the Yorkshire and Durham County Agricultural Societies, the Seventy-ninth Annual Exhibition was held at Darlington from June 29 to July 3. The Show as a whole covered a site 130 acres in extent, and was undoubtedly one of the finest exhibitions of its kind ever organised in this country. The entries of live stock were more numerous than has been the case for several years, and in every section the quality of the exhibits was of a high order. The parade of animals in the large ring formed a magnificent spectacle which could not be equalled in any other show, either at home or abroad. There was a more extensive display than usual in the Implement department, the machinery in motion section being considerably bigger than on any former occasion. In the Horticultural, Forestry, and Educational departments also noteworthy exhibits were staged.

H.R.H. the Duke of York, who was the guest of the Acting President, the Marquis of Londonderry, at Wynyard Park, visited the Show on two occasions. On the Wednesday His Royal Highness attended the General Meeting, on which occasion he was elected a Member of the Society; and on the following day he was present at the Official Luncheon given in the Showyard by the Mayor of Darlington.

The Society's reception in Darlington was of a most cordial character, and the Members of the Local Committee spared no effort to promote the success of the Show.

In spite of the broken weather on the last three days of the week, the aggregate attendance reached 182,892 and the total money receipts in the Showyard did not fall far short of the Cardiff figures. Owing, however, to the greatly enhanced expense of almost everything connected with the Show, it is a matter for regret that the financial result is a deficit of £7,766 5*s*. 8*d*.

Special Committee.

11. In view of this unfortunate state of affairs, the Council at their Meeting in July appointed a Special Committee to go into the whole question of the finances of the Society and to report thereon.

12. The Special Committee gave careful consideration to the financial position of the Society, and especially in its relation to future Shows. In order to meet the heavy cost of materials and high wages in connection with the building of the Showyard, the Committee recommended increases of the entry-fees in certain Stock sections, and in the charges for space for Implement exhibits. They also recommended that, as the charges for admission had not been raised in proportion to the cost of the Show, the following charges should be made in future:—First day, 10*s*., Second and Third days, 5*s*. each, Fourth day, 3*s*., and Fifth day, 2*s*.; Season Ticket, £1.

An enquiry was also conducted by the Special Committee into the financial position of the Woburn Experimental Farm. There was no question that the farm has, in the past, made valuable contributions to agricultural research; but, taking into consideration the expenditure on the farm, the small practical general utility of the experiments, and the lack of interest on the part of Members, the Committee were unanimously of opinion that the Woburn Farm should be given up.

The Report containing these recommendations was considered by the Council on November 3, and, after discussion, was adopted by them. Notice has been given to terminate the tenancy of the farms at Woburn at Michaelmas, 1921.

Derby Show, 1921.

13. Next year's Show will be held at Derby from Tuesday, June 28, to Saturday, July 2. To enable the catalogue of the Show to be prepared earlier, it has been decided to change the date for the closing of the Stock entries to May 2.

Prize List.

14. Offers of Champion and other prizes have been received from the following Breed Societies:—Shire Horse Society, Clydesdale Horse Society, Suffolk Horse Society, British Percheron Horse Society, Hunters' Improvement and National Light Horse Breeding Society, National Pony Society, Arab Horse Society, Hackney Horse Society, Welsh Pony and Cob Society, Shetland Pony Stud Book Society, Shorthorn Society, Dairy Shorthorn Association, Hereford Herd Book Society, South Devon Herd Book Society, Longhorn Cattle Society, Welsh Black Cattle Society, Red Poll Cattle Society, Park Cattle

Society, Aberdeen Angus Cattle Society, English Aberdeen Angus Cattle Association, Galloway Cattle Society, Ayrshire Cattle Herd Book Society, British Friesian Cattle Society, English Jersey Cattle Society, English Guernsey Cattle Society, British Goat Society, Oxford Down Sheep Breeders' Association, Shropshire Sheep Breeders' Association, Hampshire Down Sheep Breeders' Association, Suffolk Sheep Society, Dorset Horn Sheep Breeders' Association, Ryeland Flock Book Society, Kerry Hill (Wales) Flock Book Society, Society of Border Leicester Sheep Breeders, Lonk Sheep Breeders' Association, Kent or Romney Marsh Sheep Breeders' Association, Cotswold Sheep Society, South Devon Flock Book Association, Cheviot Sheep Society, Herdwick Sheep Breeders' Association, National Pig Breeders' Association, British Berkshire Society, Large Black Pig Society, Gloucestershire Old Spots Pig Society, Lincolnshire Curly Coated Pig Breeders' Association, Cumberland Pig Breeders' Association, Wessex Saddleback Pig Society, Essex Pig Society.

Challenge Cups are again offered for the best Suffolk Stallion, for the best Percheron Stallion, for the best Percheron Mare or Filly, for the best Riding Hunter, for the best Hack or Riding Pony, for the best Single Harness Horse, for the best Tandem, for the best Four-in-Hand Team, for the best group of Dairy Shorthorns, for the best animal in the South Devon Classes, for the best Longhorn Bull or Cow, for the best Longhorn Yearling Bull or Heifer, for the best Kerry animal, for the best Dexter animal, for the best Border Leicester Ram or Ewe, for the best Large White Pig, for the best Middle White Pig, for the best Tamworth Pig, for the most points awarded in a combination of entries in the Berkshire Pig Classes, for the best Large Black Sow, for the best Gloucestershire Old Spot, best Gloucestershire Old Spot Boar, best Gloucestershire Old Spot Sow, for the best Exhibit of Cider.

In the Poultry section Special and other Prizes are being contributed by the following Clubs:—Dorking Club, Black Wyandotte Club, White Orpington Club, Black Orpington Club, Indian Game Club, British Rhode Island Red Club, Blue Leghorn Club, Barred Plymouth Rock Club, Buff Plymouth Rock Club, Scots Dumpy Club, Belgian Bearded Bantam Club.

In the Rabbit section Special and other Prizes are being contributed by the following clubs:—National Belgian Hare Club, National Flemish Giant Club, National English Club, United Kingdom Dutch Club, Beveren Club, National Silver Club, Tan Club and National Polish Club.

In the Produce section Classes and Prizes will be provided for Butter, Cheeses made in 1921, Bottled Fruits and Cider.

Each breed Society which has expressed a desire for it will again have a separate classification for the wool of its particular breed.

Future Shows.

15. Invitations have been accepted by the Council to hold the Annual Show at Cambridge in 1922, at Newcastle-on-Tyne in 1923, at Leicester in 1924, and at Chester in 1925.

Trials of Agricultural Tractors and Ploughs.

16. The trials of Agricultural Tractors and Ploughs, originally announced to take place in the Autumn of 1915 but postponed on account of the War, were carried out in conjunction with the Society of Motor Manufacturers and Traders on land at Scampton and Aisthorpe, near Lincoln from September 28 to October 7 last. The awards of the Judges are as below:—

Class 1.—Internal Combustion Direct Traction Engine not exceeding 24 H.P., suitable for ploughing 2 furrows, 10 inches wide by 6 inches deep.

1st Prize Gold Medal and £20, J. I. CASE THRESHING MACHINE CO. (The Case).

2nd Prize Bronze Medal and £10, H. G. BURFORD & CO. LTD. (The Cletrac).

Class 2.—Internal Combustion Direct Traction Engine not exceeding 30 H.P., suitable for ploughing 3 furrows, 10 inches wide by 6 inches deep.

1st Prize Gold Medal and £20, ANCONA MOTOR CO., LTD. (British Wallis).

2nd Prize Bronze Medal and £10, PETER BROTHERHOOD, LTD. (The Peterbro).

Class 3.—Internal Combustion Direct Traction Engine over 30 H.P., suitable for ploughing 4 furrows, 10 inches wide by 8 inches deep.

1st Prize Gold Medal and £20, JOHN LAUSON MANUFACTURING CO. (The Lauson).

2nd Prize Bronze Medal and £10. (Not awarded.)

Class 4.—Direct Traction Steam Engine Plant, suitable for ploughing 4 furrows, 10 inches wide by 8 inches deep. Engines to comply with the Light Road Locomotive Acts.

1st Prize Gold Medal and £20, MANN'S PATENT STEAM CART & WAGON CO., LTD.

Class 5.—Internal Combustion Double Engine Set, with Wire Rope haulage for ploughing 3 or 4 furrows, 10 inches wide by 8 inches deep. Engines to comply with Light Road Locomotive Acts.

1st Prize Gold Medal and £20, JOHN FOWLER AND CO., (LEEDS), LTD.

2nd Prize Bronze Medal and £10, J. & H. McLaren, Ltd.

Class 6.—Double Steam Engine Set, with Wire Rope haulage for ploughing 3 or 4 furrows, 10 inches wide by 8 inches deep. Engines to comply with the Light Road Locomotive Acts.

1st Prize Gold Medal and £20, John Fowler & Co. (Leeds), Ltd.

Class 7.—Self-Propelled Plough for ploughing not more than 4 furrows of not more than 10 inches wide by not more than 8 inches deep.

1st Prize Gold Medal and £20, Crawley Agrimotor Co., Ltd. (The Crawley).

2nd Prize Bronze Medal and £10, Motrac Engineering, Ltd. (The Moline).

The Report of the Judges is now in preparation, and will be issued in due course.

Argentine Judges.

17. In response to a request from the Rural Society of Argentina, the following gentlemen were appointed to act as Judges of Stock at the Show held at Palermo in September last:—

Shorthorns.—Mr. Thomas A. Buttar, Corston, Coupar Angus, N.B. (Mr. Buttar also judged Down sheep); Mr. James Cameron, Balnakyle, Munlochy, N. B.; Mr. Charles A. Hirst, Crake Hall, West Heslerton, York.

Herefords.—Mr. Robert W. Hall, Bidney, Leominster, Herefordshire.

Aberdeen-Angus.—Mr. James C. Booth, Downiehills, Peterhead, N.B.

Lincoln and Long-woolled Sheep.—Mr. Clifford Nicholson, Horkstow, Barton-on-Humber.

Messrs. Buttar and Hall also officiated as Judges at the Monte Video Show, at the request of the Rural Association of Uruguay.

Chemical Department.

18. The number of samples analysed for members of the Society in 1920 was 420. The supply of both fertilisers and feeding stuffs throughout the year has been limited, leaving to purchasers but little choice in the matter of quality or price, and they have had, as a rule, to take what they could get.

The chief feature of note as regards the samples sent has been the use of Basic Slag of a lower quality than previously, the high quality ones of former years being now very seldom obtainable. Whereas Basic Slag containing as much as 40 per cent. of phosphates was formerly procurable, the present deliveries vary, as a rule, from 22 to 30 per cent. of phosphates. It would seem, however, that these lower qualities have been found to answer quite well in practice, though, when one has to consider the high cost of carriage, it cannot be so economical to send the lower qualities any distance by rail. Samples of Potash Salts also have come forward to a considerable extent.

Another feature of interest is the increased attention that is now being given to the matter of Liming of land. This indicates a revival of an old practice, the leaving off of which has, in many cases, been very detrimental to the land.

Two issues of Occasional Notes (Nos. 8 and 9, February and June) were made, and, in the latter of these, a new feature was introduced in the inclusion of various questions which had been put to the Consulting Chemist by members, and the answers thereto.

A decided forward step in the direction of obtaining an amendment of the Fertilisers and Feeding Stuffs Act, or a new Act altogether, was taken by the Society, when it invited representatives of the County Councils Association, the Central Chamber of Agriculture, the Incorporated Society of Inspectors of Weights and Measures, and the Agricultural Analysts' Association, to meet in conference and to draw up suggestions for the amendment of the Act. The conclusions come to were laid before the Ministry of Agriculture, who received these very sympathetically, and it is hoped that, before long, some of them will bear fruit.

Woburn Experimental Station.

19. The usual continuous corn-growing, rotation and green-manuring experiments were continued, and further experiments on the use of Lime and Chalk were instituted on the field scale, thereby supplementing the observations made in the pot-culture experiments.

A feeding experiment with bullocks, on the use of Oil extracted Palm-nut Meal, was carried out at the suggestion of the Imperial Institute, and in conjunction with similar work at Wye College. The Oil-extracted Meal was not found to be of any use for either sheep or pigs, the former rejecting it altogether. For cattle it was found not to answer as well as undecorticated Cotton Cake, either in respect of live-weight gain or financial return.

At the Pot Culture Station, the Hills' experiments were concerned with the influence of compounds of Tin upon Wheat. Other experiments were upon the use of Chromium Salts, of Sulphur, and of different Silicates. Mr. James Crabtree, chemical assistant at the Pot Culture Station, gave up his post in March, having been appointed superintendent of Experimental Sugar-cane farms in British Guiana. His place has now been filled by Mr. A. Blenkinsop, formerly of Armstrong College, Newcastle-on-Tyne.

The Annual Visit of the Council to the Farm took place on July 28, but the Members' Visit had once more to be postponed on account of the difficulties of railway and other facilities.

Botanical Department.

20. The two most striking characteristics of the work in the Botanical department during 1920 were the demand for information about varieties of the cereal crops and for methods of coping with the weeds of arable land. A number of specimens of wheat and barley were received with the query whether, inasmuch as they differed from the bulk of the crop, they were evidence of the degeneration of some of the varieties introduced comparatively recently. Taken altogether the series formed an interesting commentary on the effective way in which threshing machines are contaminating crops, for, with one exception, these supposedly "reversionary" forms were well-known standard varieties.

Inquiries regarding fungoid pests of farm crops and fruit trees were of about the same order of frequency as in the previous year. An increase in the number of specimens of Apple Mildew probably points to the fact that this troublesome disease is increasing.

Early in the year the number of inquiries on the formation of permanent grass land threatened to be too numerous for the department to cope with individually, and a leaflet on the subject was issued giving instructions for the preparation of the land, the methods of sowing the seed, and the subsequent management of the fields, as well as prescribing seed mixtures suitable for various conditions.

As compared with the previous year the number of samples of seeds tested will probably prove about the same.

Zoological Department.

21. The work of the Zoological department has, as in former years, comprised the giving of advice in cases of insect attacks, the identification of zoological specimens, interesting for one reason or another, and research into obscure points in the life-history of pests. The insect attacks reported have involved a large number of insects and a wide variety of crops, but they have presented few features of general interest. The specimens sent for identification have included a considerable number of animal parasites, and of insects and arachnids infesting buildings and stored produce. In the research branch of the work, particular attention has been paid to the familiar corn pests, with regard to which many points are still obscure, and investigations at Cambridge have thrown some light on problems connected with frit-fly and wheat bulb-fly.

Animal Diseases.

22. The most regrettable feature in connection with the occurrence of the contagious diseases has been the large number of outbreaks of foot-and-mouth disease. During the first two months of the year there were no fewer than 39 outbreaks in 14 different counties, and in at least 10 of these the disease apparently had its origin in a fresh introduction of the virus from abroad. For a period of about six weeks, commencing on March 1, the country was again free from the disease, but independent outbreaks occurred in Norfolk and Kent in April, and were followed by others in Norfolk, the Isle of Ely, and East Sussex in June, and in Kent in September. The most serious extension of the disease occurred in Norfolk, in which 24 outbreaks occurred in June, July, and August.

23. There has been a notable increase in the outbreaks of anthrax since the beginning of the year, probably in consequence of increasing use of infected feeding stuffs of foreign origin. Glanders has nearly reached the point of extinction, and parasitic mange and swine fever have been less prevalent than in the previous year, but there has been an increase in the reported outbreaks of sheep scab. The facts with regard to rabies have been very disappointing. Up to the middle of April only four cases had been confirmed, and no case was recorded during the following four months. Towards the end of August three cases (probably ascribable to a fresh introduction of the disease from the Continent) were detected in Wiltshire, and 15 other cases occurred in that county and Glamorgan before the end of October.

24. During the year researches regarding abortion in cows and mares, and inflammation of the udder in cows, have been in progress at the Royal Veterinary College. In the ensuing year it is proposed to offer the assistance of the research staff to the owners of pedigree herds of any breed who wish to eradicate tuberculosis. Full particulars of the scheme can be obtained on application to the Principal of the College.

Epizootic Abortion Order

25. Opinions having been strongly expressed to the Government that the exposure in a market of cows or heifers which have recently aborted, or the private sale of any such animal, without the purchaser being warned of the fact that the animal had aborted, should be made illegal, the Minister of Agriculture issued in January last an Order empowering local authorities to make regulations of this character applicable to their particular districts.

Sheep Scab Order.

26. A new Order, embodying a number of amendments of the Sheep Scab Orders of 1905 and 1910, has also been issued by the Ministry of Agriculture, with a view to improving and rendering more effective the administrative arrangements for dealing with the disease on premises on which sheep scab has appeared

Importation of Live Cattle.

27. The Council have during the past year continued to protest against the importation into this country from abroad of any live cattle, except for slaughter at port of landing. Delegates from the Society attended a joint deputation which waited on Lord Lee on April 19 with regard to the importation of Friesian cattle from Canada.

Medals for Cattle Pathology.

28. In the competitive examinations conducted at the Royal Veterinary College for the Society's Medals for proficiency in Cattle Pathology, including the diseases of Cattle, Sheep, and Pigs, the Silver Medal was gained by Mr. L. Hughes, of "The Holt," Eynsham, Oxford, and the Bronze Medal by Mr. H. S. Robinson, of "Eversley," Maghull, near Liverpool.

"Queen Victoria Gifts."

29. The Trustees of the "Queen Victoria Gifts" Fund have made a grant of £140 for the year 1920 to the Royal Agricultural Benevolent Institution to be distributed as three gifts of £10 each in respect of male candidates, three gifts of £10 each in respect of married couples, and eight gifts of £10 each in respect of female candidates.

National Diploma in Agriculture.

30. As the result of the Twenty-first Annual Examination for the National Diploma in Agriculture held at the Leeds University from April 9 to 15 last, 35 candidates were successful in obtaining the Diploma, three with Honours.

National Diploma in Dairying.

31. The Twenty-fifth Annual Examination for the National Diploma in Dairying was held at the University College and British Dairy Institute, Reading, for English students, from September 10 to 18, and at the Dairy School, Kilmarnock, for Scottish students, from September 24 to October 2.

For the first time the Diploma "with Honours," was awarded to candidates obtaining not less than 80 per cent. of the maximum marks.

Fifty-eight candidates were examined at the English Centre, of whom 30 were successful—four reaching the Honours standard. At the Scottish Centre 32 candidates presented themselves, of whom 16 passed—six obtaining Honours.

Emergency Committee.

32. With the gradual removal of control from agricultural produce the work of the War Emergency Committee has necessitated only four meetings this year, and the Committee is henceforward to be known as the Emergency Committee.

A resolution was passed expressing the opinion that a continuance of the 1919 prices for wheat would lead to a great diminution in the food supply, and that nothing less than a price of 95*s*. per quarter, quoted by the Minister of Agriculture as the equivalent of 76*s*. per quarter based upon the cost of production in 1918, would arrest the decline in the cultivation of that cereal. It was subsequently announced by the Prime Minister that, so long as wheat was deprived of a free market, the controlled price of the 1920 crop should be the monthly average price of imported wheat, provided the price paid to the grower did not exceed 95*s*. per quarter.

In accordance with the recommendation of the Emergency Committee the Society has discontinued the nomination of representatives on the Agricultural Wages Board.

Hickman *v.* R.A.S.E.

33. An action brought by Mr. A. J. Hickman against the Society for damages for alleged wrongful dismissal from Membership and for reinstatement was heard in the High Court of Justice in July last by Mr. Justice A. T. Lawrence and a special jury. The hearing lasted three days, at the end of which a verdict was found for the Society. A formal notice of appeal has been served.

Secretary's Resignation.

34. At the close of the Council Meeting on November 3, the Chairman said he had a painful duty to perform, viz., to read a letter from the Secretary to Mr. Adeane, Chairman of the Finance Committee, announcing his resignation.

24th September, 1920.

DEAR MR. ADEANE.

For some considerable time I have felt that the increasing demands in connection with the office of Secretary of the Society have become somewhat exacting, and, whereas formerly the work was a pleasure, it has become a worry to me.

After forty-three years' service it might be supposed that I could not do so well as in my younger days, and the continued work, without a holiday since the outbreak of war, has undoubtedly been a strain.

In addition to this I am sorry to say that the blow on my head from the fallen telephone post in the motor car accident in Belgium has had more effect on me than I anticipated at the time.

Having regard to these matters, and to the fact that a Special Committee is now considering the affairs generally of the Society, I feel that it is an opportune moment for me to ask the Council to accept my resignation of the office it has been my privilege and pride to hold since 1906.

You will, I am sure, recognise that the work of the Society has very greatly increased during my term of office; and, however much I may regret the severance of my connection with this great Society, I feel that it is a duty I owe to the Council and to myself to make this application.

It has been a difficult task for me to write this letter, and I trust that you will recognise that during my long years of service I have worked hard to carry out the wishes of the Council, and for the members generally.

With much regret,

I remain,
Yours very truly,
(Signed) THOS. MCROW.

Charles Adeane, Esq., C.B.,
Hertford Street,
Mayfair, W.

On the motion of the Chairman, it was unanimously resolved that the resignation be accepted with regret, and that the Finance Committee be authorised to make the necessary arrangements for the appointment of a successor, and also to settle the question of a pension to the retiring Secretary, who was fully entitled to one after his 43 years' service to the Society.

Agricultural Relief of Allies Committee.

35. The work of the Agricultural Relief of Allies Fund is nearing its conclusion, the Executive Committee having decided to close the Fund at the end of the present year. Since its establishment by the Royal Agricultural Society in 1915 there has been received in cash subscriptions about £198,000. Adding to this £10,645 as the value of gifts in kind made to the Committee, which the latter have shipped and distributed, £9,436 as the value of cattle sent on behalf of the Scottish Committee for Belgian Relief, and £7,000 as the cash value of small agricultural implements sent direct to the devastated regions by the Canadian branch of the Committee, there is a total of £225,079 as the full amount raised by the farmers of the British Empire on behalf of those in the war zone.

Of the £198,000 received by the Committee, £74,431 has been distributed in France, £53,264 in Belgium, £30,195 in Serbia and about £500 in Poland. There remains £39,066 still to be distributed, and of this the Committee have allocated £19,805 to Serbia, £2,236 to Belgium, and £15,000 to Roumania. Arrangements are in hand for the distribution of these sums.

During the past year there has been a remarkable manifestation of gratitude on the part of the Belgian recipients of the Committee's relief. In May the Governor and Provincial Council of Western Flanders invited the Duke of Portland, as President of the Fund, to attend a specially organised exhibition of some of the stock given by the Committee which was held in the historic Grand' Place of Ypres. At the show there were exhibited more than 300 animals given by the Committee, and all who saw them were impressed with the care which was evidently being bestowed upon them by their new owners, and recognised how important a part they must have played in the progress of the district towards agricultural recovery.

The Duke of Portland accepted, in the name of the Royal Agricultural Society and of the Committee, a splendid bronze bust of the King of the Belgians and an album containing the signatures of the majority of those who had received gifts of stock from the Committee. The Governor of Western Flanders also handed to His Grace the Grand Cordon of the Order of the Crown, which had been conferred upon the President of the Fund by His Majesty the King of the Belgians. The bust, together with the album accompanying it, have been presented to the Society by His Grace, and will form a permanent memorial of the part played by the Society in alleviating the misfortunes of the small farmers of our Belgian Allies.

The Duke of Portland and Mr. Adeane, the Honorary Treasurer of the Fund, have also paid a visit to the farms in the area of the Somme to which the Committee contributed live stock, and there again there was abundant evidence of the invaluable nature of the Committee's help, and especially of the timeliness of its arrival. Letters expressing the gratitude of the French agricultural population have been received from the President (Monsieur Millerand) and from the Préfets of the Departments in which help has been given, *i.e.* the Somme, the Aisne, the Oise and the Marne.

The Committee express their thanks to all whose who gave their support in any way to the Fund, and assure them that their help has been of the greatest practical value to the stricken peasants of our Allies.

By order of the Council,

THOMAS McROW,
Secretary.

16, Bedford Square,
London, W.C.1.
November, 1920.

NATIONAL AGRICULTURAL EXAMINATION BOARD.

I.—REPORT ON THE RESULTS OF THE TWENTY-FIRST EXAMINATION FOR THE NATIONAL DIPLOMA IN AGRICULTURE,

HELD AT LEEDS, APRIL 9 TO 15, 1920.

1. The Twenty-first Examination for the NATIONAL DIPLOMA IN AGRICULTURE was, by the courtesy of the authorities, held at the University of Leeds, from the 9th to the 15th April last.

2. The subjects of Examination were Practical Agriculture (two papers), Farm and Estate Engineering (including (a) Surveying and Farm Buildings, (b) Machinery and Implements), Agricultural Chemistry, Agricultural Botany, Agricultural Book-keeping, Agricultural Zoology, and Veterinary Science. Under the Regulations, the whole eight papers may be taken at one time, or a group of any three or four in one year and the remaining group of four or five in the year following. Candidates taking the whole Examination in one year who fail in not more than two subjects are allowed to take those subjects alone in the succeeding year. Candidates failing in a single subject of a group are permitted to take that subject again in conjunction with the second group.

3. One hundred and twenty-seven candidates presented themselves, as compared with 33 last year. Thirteen candidates took the whole Examination, 34 who had previously passed in certain subjects appeared for the remaining portion, and the other 80 candidates came up for a first group of subjects.

4. As the result of the Examination, 35 candidates were successful in obtaining the Diploma, *three with Honours.* In the list which follows the names of the candidates gaining Honours are given in order of merit, and those of the other Diploma-winners in alphabetical order :—

Diploma, with Honours.

1. WILLIAM CALDWELL, West of Scotland Agricultural College, Glasgow.
2. JAMES ANTONY MORE, East of Scotland Agricultural College, Edinburgh.
3. OLIVER CHANCE CASSELS, Harper-Adams Agricultural College, Newport, Salop.

Diploma.

Margaret Mabel Farie Anderson, West of Scotland Agricultural College, Glasgow.
Frederick Thomas Bennett, 110, Basingstoke Road, Reading.
Frederick Christopher Bobby, Harper-Adams Agricultural College, Newport, Salop.
Robert Crawford Rodger Boyd, West of Scotland Agricultural College, Glasgow.
Amy Margaret Braithwaite, University College, Reading.
James Bulloch, West of Scotland Agricultural College, Glasgow.
Lewis L. L. Cameron, North of Scotland Agricultural College, Aberdeen.
Geoffrey Fletcher Clay, Harris Institute, Preston.
Harry Samuel Cuthbertson, Royal College of Science, Dublin.
James Fairweather, North of Scotland Agricultural College, Aberdeen.
Florence Dorothy Hawes, University College, Reading.
David Hendry, West of Scotland Agricultural College, Glasgow.
William Fairbairn Hesling, Harper-Adams Agricultural College, Newport, Salop.
Thomas Hunter, West of Scotland Agricultural College, Glasgow.
Jorian Edward Forwood Jenks, Harper-Adams Agricultural College, Newport, Salop.
David Percival Johnston, Royal College of Science, Dublin.
Percy Albert Keen, Harris Institute, Preston.
Douglas McHardy, South-Eastern Agricultural College, Wye, Kent.
John Moresby Moresby-White, New College, Oxford.
Thomas Goodall Mountford, Harper-Adams Agricultural College, Newport, Salop.
Borland Pitt, West of Scotland Agricultural College, Glasgow.
Mary Shumla Ridout, Harper-Adams Agricultural College, Newport, Salop.
Roger Sayce, Harris Institute, Preston, and University of Leeds.
William Ronald Seward, South-Eastern Agricultural College, Wye, Kent.
Thomas Sharvin, Royal College of Science, Dublin.
Thomas John Stewart Smellie, West of Scotland Agricultural College Glasgow.
Daniel Murray Smillie, West of Scotland Agricultural College, Glasgow.
James Steele, West of Scotland Agricultural College, Glasgow.
Ernest Leonard Taylor, Harris Institute, Preston.
James Francis Herbert Thomas, University College, Reading.
James L. Tindal, Junr., West of Scotland Agricultural College, Glasgow.
Frederick Whittle, Harris Institute, Preston.

5. Of the 80 candidates appearing for a first group of subjects, the 35 whose names are given below succeeded in passing, and are therefore entitled to take the remaining subjects at next year's examination, when, if successful, they will be awarded the diploma :—

Robert Barr, West of Scotland Agricultural College, Glasgow.
Philip S. Brown, Harper-Adams Agricultural College, Newport, Salop.
Ian Campbell, West of Scotland Agricultural College, Glasgow.
Ulick Casey, University College, Galway.

Edward G. Chapman, Midland Agricultural and Dairy College, Sutton Bonington, Loughborough.
Perronelle Mary Chevallier, University College, Reading.
Ralph A. Coulthurst, Midland Agricultural and Dairy College, Sutton Bonington.
Trayko Dayitch, Harper-Adams Agricultural College, Newport, Salop.
Alex. B. Dickson, West of Scotland Agricultural College, Glasgow.
Leslie R. Doughty, Midland Agricultural and Dairy College, Sutton Bonington.
Herbert C. Ducker, South-Eastern Agricultural College, Wye, Kent.
Edward Farquharson, North of Scotland Agricultural College, Aberdeen.
Charles K. Flintoff, Midland Agricultural and Dairy College, Sutton Bonington.
James Furness, Junr., Midland Agricultural and Dairy College, Sutton Bonington.
Bryce B. Garven, West of Scotland Agricultural College. Glasgow.
Herbert E. Gatton, South-Eastern Agricultural College, Wye, Kent.
Reginald J. Haines, Midland Agricultural and Dairy College, Sutton Bonington.
John S. King, Midland Agricultural and Dairy College, Sutton Bonington.
Alex. R. Lamb, Midland Agricultural and Dairy College, Sutton Bonington.
John McEvoy, Royal College of Science, Dublin.
Alex. W. McGowan, West of Scotland Agricultural College, Glasgow.
Herbert Marsland, Harris Institute, Preston.
Doris Melville-Jackson, South-Eastern Agricultural College, Wye, Kent.
Gerald P. L. Miles, South-Eastern Agricultural College, Wye, Kent.
Graham Munro, West of Scotland Agricultural College, Glasgow.
Andrew W. Paterson, West of Scotland Agricultural College, Glasgow.
William T. Price, University College, Reading.
William Riddet, West of Scotland Agricultural College, Glasgow.
Clifford Wm. Roberts, Midland Agricultural and Dairy College, Sutton Bonington.
Robert M. S. Routledge, University of Leeds.
Milisav Todorovitch, Harper-Adams Agricultural College, Newport, Salop.
John N. C. Weir, West of Scotland Agricultural College, Glasgow.
John V. Whitelaw, West of Scotland Agricultural College, Glasgow.
Geoffrey M. P. Williams, Midland Agricultural and Dairy College, Sutton Bonington.
Robert C. Wood, University of Leeds.

Fifteen of the 45 unsuccessful candidates who sat for a group of three or four subjects failed in a single subject, which they will be permitted to take again next year in conjunction with the second group.

6. The Reports of the Examiners in the different subjects are appended:—

Practical Agriculture. (First Paper, 300 Marks. Second Paper, 300 Marks.) Wm. Burkitt, B.Sc., J. G. Stewart, M.A., B.Sc., and Capt. J. A. Symon, D.S.O., M.A., B.Sc.

The written work was, on the whole, well done. The oral examinations, however, revealed a serious lack of practical knowledge on the part of many of the candidates.

Comparatively few farmers' sons attended the examination.

A considerable proportion of the candidates had acquired no practical experience before entering an Agricultural College, and, as a rule, had attempted to make good the deficiency by working on College or other farms during vacations. We are, however, strongly of opinion that intermittent spells of farm work are not sufficient preparation for an examination of this character.

In several cases there was distinct evidence of "cramming," and students appear to have neglected such opportunities as exist at Colleges for improving their practical knowledge. Judging by the answers to some of the questions, it would seem that more attention might with advantage be paid to modifications of farming practice necessitated by the changes due to the War.

FARM AND ESTATE ENGINEERING. (a) Surveying and Farm Buildings (150 Marks), Robert Cobb, F.S.I. (b) Machinery and Implements (150 Marks), Prof. R. Stanfield, M.Inst.C.E.

Surveying and Farm Buildings:—In my opinion the examination this year has shown in a marked degree to what a large extent the candidates depend on crammed knowledge rather than on any practical experience with the subject. In the *vivâ voce* examination, generally speaking, the manipulaton of the theodolite and the reading of the level staff were lamentably weak; in fact, several of the candidates admitted that they had never seen a theodolite, and 50 per cent. of the failures in this subject was due to this defect. The theory and book knowledge were up to the average.

I was pleased to note, in view of the importance of the subject at the present time, and also in view of my report two years ago, that the subject of land drainage was better grasped.

Machinery and Implements:—Most of the candidates who presented themselves for examination this year appeared to possess a good practical knowledge of the principle of action and working of agricultural implements and the usual machinery connected with a farm. The answers in both the written and oral examinations, as a rule, indicated that the knowledge had not been obtained solely from text-books, but was the result of actual practical experience. In this respect the standard is much higher than I have noticed on former occasions, and it is gratifying to find that the candidates are now giving more attention to the machinery connected with farming operations. In questions involving calculations I find that the candidates rarely take the precaution to check their answers, with the result that errors were made—many of them being arithmetical—which would have been avoided by a simple check. In the oral examination I had occasion to ask some of the candidates questions involving an elementary knowledge of general chemistry, and I regret to find that very little attention appears to be given to this important subject.

AGRICULTURAL CHEMISTRY. (300 Marks.) Bernard Dyer, D.Sc., F.C.S., F.I.C., and J. Augustus Voelcker, M.A., B.Sc., Ph.D.

We have found it a somewhat difficult matter to arrive at a proper estimate of the capabilities of the different candidates. With the written answers there was no trouble, and these, as a whole, were of good average, and one or two especially good. On the paper-work it was only necessary to refer about one-sixth of the total number of candidates (62) for further consideration.

In the *vivâ voce* examination, however, it was very hard, largely owing to the fact that many of the candidates had taken an active part in the War, to discriminate between what had its basis in a good grounding in science but had to some extent been since forgotten, and what was merely acquired for the time being.

Especially hard was this task for examiners who had before them men who bore, in wounded limbs and shell-shocked frames, the marks of what they had gone through. In some cases men who had done quite fair papers failed altogether under *vivâ voce* examination: in other cases, just the reverse was shown.

But, as to those who had not gone through the War, it may be said generally that they did not show that satisfactory grounding in general chemistry which we think should have been apparent, and once more we have to express our doubts as to the value of the present substitute for the earlier examination (in Part 1 of this examination) in General Chemistry.

The written replies sent in were fairly distributed between the different questions set by us, and none of them seemed to give rise to any particular misunderstanding or difficulty, nor do they call now for special comment from us.

AGRICULTURAL BOTANY. (300 Marks.) R. Stewart MacDougall, M.A., D.Sc.

The majority of the candidates showed a good knowledge of the subject and most of them had at least a fair working acquaintance—as tested practically—with farm crop and weed plants and their seeds.

The average of the examination was quite satisfactory.

AGRICULTURAL BOOK-KEEPING. (200 Marks.) L. F. Foster. F.C.I.S., F.L.A.A.

On the whole, the papers submitted this year showed an improvement over those presented in 1919, and the percentage of failures was smaller in consequence. Many students passing in this subject failed in others. It is important, however, that such students should keep well in touch with the subject during the period intervening before the next examination.

There is a general lack of knowledge in this subject, and although the paper set was based almost entirely upon principles requiring such treatment as would obtain in practice, very few students were able to present the accounts in correct form. A thorough understanding of the question set as an exercise was not obtained in a great many cases, while the omission of the requisite opening entries—the basis upon which the accounts should have been built—resulted in altogether incorrect Profit and Loss Accounts and Balance Sheets.

From personal contact with many of the examinees, I am forced to the conclusion that this subject is not given sufficient prominence in their preparation. In very few cases had the candidates been taught by special teachers, and in the great majority of cases the subject appeared to have been taught by agricultural teachers possessing little or no practical knowledge of the subject. It is suggested that in view of its present-day importance the Colleges should consider the advisability of providing adequate teaching in the subject, because (1) the diploma carries with it a hallmark of efficiency, and (2) successful candidates are usually in a position to further the importance of the subject in their future work.

Quite 80 % of the candidates attempted the alternative question on Farm Costs, which was somewhat surprising. Very few were alive to the complexities of this branch of the subject and the principles involved, and it is probable that so many attempted the question not because they possessed any detailed knowledge of farm costs but by reason of the fact that it is a popular subject for discussion at the present time.

AGRICULTURAL ZOOLOGY. (200 Marks.) Cecil Warburton, M.A.

The candidates in this subject were much more numerous than last year—76 as against 18. Most were able to show a fair knowledge of the subject as far as it can be acquired from text books, and good answers were given to questions on such matters as the life-history of the liver fluke, or the relation of particular birds to agriculture. There was, however, very little evidence of field work, and the candidates who were able easily to recognise quite common insect pests or the injury done by them were far too few.

Sufficient attention had not been paid to insect larvæ, and particularly to the types of larvæ characteristic of certain groups of insects of similar habit. For example, nearly all knew the general appearance of the grub of the cockchafer but were quite unaware that the whole group of Lamellicorn beetles have larvæ of the same type, often only to be distinguished by an expert.

VETERINARY SCIENCE. (200 Marks.) Professor Sir John McFadyean, M.B.

The general standard of knowledge exhibited by the candidates was not quite satisfactory and this applies especially to practical knowledge.

Many of the candidates appeared to be heavily handicapped in regard to questions on physiology by insufficient grounding in Chemistry.

7. The thanks of the Board are again due to the authorities of the University of Leeds, for their liberality and courtesy in placing the Large Hall and other rooms of the University at the Board's disposal for the Examination; and to the Examiners, for the care and attention they bestowed upon the written answers to the papers set, and upon the *vivâ voce* examination.

ERNEST MATHEWS, *Chairman*.
THOMAS MCROW, *Secretary*.

16 Bedford Square, London, W.C.1.
May, 1920.

II.—REPORT ON THE RESULTS OF THE TWENTY-FIFTH EXAMINATION FOR THE NATIONAL DIPLOMA IN DAIRYING, 1920.

1. The Twenty-fifth Annual Examination for the National Diploma in the Science and Practice of Dairying was held for English candidates at the University College and British Dairy

Institute, Reading, from September 10 to 18; and for Scottish candidates at the Dairy School for Scotland, Kilmarnock, from September 24 to October 2.

2. On the recommendation of the Examiners last year, the pass standard for the Diploma was raised for the 1920 Examination, and it was also decided to institute an "Honours" Diploma, to be awarded to candidates obtaining an aggregate of 80 per cent. (1,040) of the maximum marks (1,300) in the Examination, provided that they also obtained at least 80 per cent. (320) of the maximum marks (400) in the General Dairying and Cheese-making papers.

3. Fifty-eight candidates presented themselves at the English Centre. Of these, 4 reached the "Honours" standard, and 26 others were awarded the Diploma. Their names are as under:—

Diploma with Honours.

1. IRENE E. SMALE, University College and British Dairy Institute, Reading.
2. { ANNIE SHEPPARD, Midland Agricultural and Dairy College, Kingston, Derby.
   ELIZABETH MARJORIE SPURR, Midland Agricultural and Dairy College, Kingston, Derby. }
4. CHARLES MONTAGUE SELBY, University College and British Dairy Institute, Reading.

Diploma.

EVELYN MURIEL ALLDAY, Midland Agricultural and Dairy College, Kingston, Derby.

MARGARET EDITH ANDREWS, University College and British Dairy Institute, Reading.

GRACE BOWDEN, University College and British Dairy Institute, Reading.

WINIFRED BRENAN, University College and British Dairy Institute, Reading.

ESTHER BROADBENT, University College and British Dairy Institute, Reading.

EDITH BUCKNELL, University College and British Dairy Institute, Reading.

GLADYS LYNETTE CONNOLLY, University College and British Dairy Institute, Reading.

DORIS MARGARET CUMMING, Lancashire County Council Dairy School, Hutton, Preston, and British Dairy Institute, Reading.

TRAYKO DAYITCH, University College and British Dairy Institute, Reading.

ALICE EASTMAN, University College and British Dairy Institute, Reading.

EILEEN WILSON ERSKINE, University College and British Dairy Institute, Reading.

ANNIE HARRISON, University College and British Dairy Institute, Reading.

ANNIE DOROTHY JONES, University College, Aberystwyth, and British Dairy Institute, Reading.

Hilda Annie Jones, University College, Aberystwyth, and British Dairy Institute, Reading.
Katie Jones, University College, Aberystwyth, and British Dairy Institute, Reading.
Kathleen L. Lomax, Midland Agricultural and Dairy College, Kingston, Derby.
Jessie Matthews, Midland Agricultural and Dairy College, Kingston, Derby.
Helen Mary Hector Morice, The College, Studley, Warwickshire.
Frances Ethel Nevill, Midland Agricultural and Dairy College, Kingston, Derby.
Agnes Sybil Price, University College, Aberystwyth, and British Dairy Institute, Reading.
Kathleen Pritchard, University College, and British Dairy Institute, Reading.
Dorothy Clayton Smith, University College and British Dairy Institute, Reading.
Herbert William Tomlinson, University College and British Dairy Institute, Reading.
Donald Joseph Vaux, University College and British Dairy Institute, Reading.
Jessie H. Williams, University College and British Dairy Institute, Reading.
Olive Windebank, University College and British Dairy Institute, Reading.

4. At the Scottish Centre *, 32 candidates were examined. Six of these gained Honours, and 10 others the Diploma :—

Diploma, with Honours.

1 **James Antony More**, East of Scotland College of Agriculture, Edinburgh.
2. { **Daniel Murray Smillie**, West of Scotland Agricultural College, Glasgow.
{ **Geoffrey Fletcher Clay**, Harris Institute, Preston.
4. **James Love Tindal, Jnr.**, West of Scotland Agricultural College, Glasgow.
5. **Andrew Wilson Paterson**, West of Scotland Agricultural College, Glasgow.
6. **Ella Margaret Monie**, West of Scotland Agricultural College, Glasgow.

Diploma.

Margaret Mabel Farie Anderson, West of Scotland Agricultural College, Glasgow.
John Armour, West of Scotland Agricultural College Glasgow.
Alexander Bruce Dickson, West of Scotland Agricultural College, Glasgow.
Leopold A. Liventhal, University College, Cardiff.
Katherine McInnes, West of Scotland Agricultural College, Glasgow.
Millicent Moir, North of Scotland College of Agriculture, Aberdeen.
Charlotte Reid, North of Scotland College of Agriculture, Aberdeen.
James Steele, West of Scotland Agricultural College, Glasgow.
Diana Yvonne Elise Watt, West of Scotland Agricultural College, Glasgow.
Gwyneth Sarah Williams, University College, Cardiff.

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* The candidates at the Scottish Centre had all been students at the Kilmarnock Dairy School.

5. The examiners at both Centres were:—John Gilchrist, F.S.I., (General Dairying, practical butter-making, and capacity for imparting instruction), John Benson (Cheese-making), and Dr. J. Augustus Voelcker, M A., F.I.C. (Chemistry and Bacteriology).

6. In his report, Mr. Gilchrist states that "for the practical work of butter-making at Reading there were 52 candidates, and at Kilmarnock 27 candidates. These, with a few exceptions at Reading, carried out the work very creditably. At both centres the answers generally were given in a satisfactory manner, but a few of the papers showed that the candidates were unable to apply the knowledge they had gained to the practical work of a dairy farm. In my opinion, more care should be given by both teachers and students to this part of the training. I found the higher standard of pass marks fixed this year to be a distinct advantage, and I am glad to state that so many were able to obtain honours in the examination. At both centres the arrangements for conducting the examinations were admirable."

7. Mr. Benson reports that "the results of the Examination in Cheese-making were this year very satisfactory, the standard of knowledge being higher than in recent years. In the *theory* of cheese-making many candidates did exceedingly well, but there were others who had not had sufficient training to enable them to obtain the diploma, especially now that the minimum marks for a pass have been raised. This year there were 58 candidates at the English centre, and the accommodation at Reading was taxed to its utmost. The work in my section was extremely arduous; and, in my opinion, if this examination is to be confined to reasonable limits and completed in one week, it will be advisable for those responsible for the training of candidates to have a preliminary examination at each training centre in order to eliminate those who have little chance of passing in all subjects.

"In *practical* cheese-making there was a general and decided improvement, and the bulk of the cheeses made were of excellent quality. The progress is greater in the *practice* than in the *theory* of cheese-making. The style of handling the milk was very good, and evidently most of the candidates had been well and carefully trained and must have had considerable experience. In the methods of making blue-veined cheese there was a very general improvement.

"The arrangements made at both centres for conducting the Examination were, as usual, excellent and complete, and the supply of milk ample and of good quality."

8. "In the subject of Chemistry and Bacteriology at the English Examination a failure of 38 per cent."—Dr. Voelcker states—"would seem to imply that there is considerable scope for improvement in the preparation of the candidates. Yet it must be said that the number of 'utter failures,' or of candidates presenting themselves with but little chance of success was not large, and the majority of failures was of candidates whom a little more attention to the careful answering of the questions would have carried through. The wisdom of the regulation obliging those presenting themselves to have spent a certain time on a farm was shown in the generally good replies to questions having a bearing on practical farming. It would be well if a similar insistence were placed on the following of a practical laboratory course in chemistry, for several of those interrogated admitted that they had not even prepared hydrogen or other similar bodies With a few exceptions of this kind, the replies generally were marked by an absence of incorrectness and a determination to set down only what was really known At the Scottish Centre the work was, on the whole, very well done. The papers sent in comprised several of more than usual excellence, and these were, as a rule, followed up by a good *vivâ voce* examination. The failures amounted to nine only, and, among these, somewhat significantly, were all the five candidates entering for the written work only. One would have expected a year's preparation to have shown a better result. Of individual questions at the Kilmarnock Examination, the one that presented most difficulty was No. 5, several candidates evidently not understanding what was meant by the term 'morphology' as applied to micro-organisms. In no case either was a question referring to 'vitamines' fully or satisfactorily replied to."

ERNEST MATHEWS,
Chairman.

THOMAS McROW,
Secretary,
16 Bedford Square, London, W C.
October, 1920

ANNUAL REPORT FOR 1920 OF THE PRINCIPAL OF THE ROYAL VETERINARY COLLEGE.

ANTHRAX.

THE number of confirmed outbreaks of this disease in each of the last seven years is shown in the following Table :— .

Year	Outbreaks	Animals attacked
1914	722	796
1915	575	642
1916	571	687
1917	421	480
1918	245	282
1919	234	314
1920	459	547

The figures in the Table support the view that the great majority of the outbreaks of anthrax occurring in this country are caused by feeding with imported foreign cake, grain, or other feeding stuffs which are contaminated with the germs of the disease. So far as one can judge from the available information, this is the only country in which anthrax commonly arises in that way, and it is certain that in all the countries in which it is of common occurrence infection is generally the consequence of a more or less persistent local soil contamination. In every case of anthrax some bacilli escape from the body of the animal during life, and colossal numbers are liberated in any case in which the carcase is skinned or opened. This is the starting point of soil infection, but in countries with a warm climate the danger which it involves may be greatly increased by subsequent multiplication of the bacilli and formation of spores in the soil. Where the proper precautions in dealing with cases of anthrax are neglected or are impracticable (as in some foreign countries), wide ranges of pasture may become intensely dangerous for horses, cattle, or sheep; but, as has been pointed out in previous annual reports, the outbreaks in Great Britain have never been explainable on the supposition that they are the result of a local soil infection. Had that been the usual source of the disease the recent war would have left the number of cases of anthrax unaffected or at the most reduced in proportion to the reduction in the total number of animals. But, as will be seen from the Table, there was a sensible fall in the number of outbreaks in 1915 and 1916, and afterwards a rapid fall, which by the end of 1918 had reduced the outbreaks to about one-third of the usual pre-war number. The disease reached its lowest ebb in the first half of 1919, but the outbreaks had begun to show an upward tendency in the latter half. In 1920 the outbreaks were nearly double those of the preceding year, and in another year they will probably reach the pre-war level.

GLANDERS.

The following Table shows the number of outbreaks of this disease and the number of animals attacked in each of the last seven years :—

Year	Outbreaks	Animals attacked
1914	97	286
1915	50	87
1916	47	117
1917	24	62
1918	34	98
1919	25	61
1920	15	22

The figures for the past year are a little disappointing, as, in view of the small number of outbreaks in 1919, there was reason to hope that another twelve months would see the end of the disease in this country. On the other hand, they are highly satisfactory when it is remembered that during the first seven years of the present century the annual outbreaks were always over 1,000, and that they numbered 162 in 1913. Unfortunately, owing to the comparative rarity of the disease during recent years, many horse-owners are not well acquainted with its symptoms or are apt to be caught off their guard with suspicious cases, and the fact that in many instances the disease is latent for a considerable period places further difficulty in the way of its complete eradication.

SHEEP SCAB.

The following Table shows the number of reported outbreaks for the past six years :—

Year	Outbreaks
1915	257
1916	381
1917	543
1918	351
1919	438
1920	479

The figures for the past year are unsatisfactory, as they show little improvement on the previous year, and an actual retrogression as compared with 1915 and 1916, even if the reduction in the sheep stock since the latter year is left out of account.

There can be no doubt that the failure of the measures hitherto employed to stamp out sheep scab has been in the first place due to non-reporting of cases of the disease, especially on the part of owners of infected flocks in Wales and the north of Scotland, and, in the second place, to the difficulty of discovering or tracing the existence of sheep scab in some of the large hill or mountain farms in Wales and Scotland.

It is satisfactory to find that by means of the new powers taken in the Sheep Scab Order of 1920 the Ministry of Agriculture proposes to make a special effort to deal with outbreaks of the disease in those counties which owing to their inaccessibility have remained nurseries of the disease. This order requires at least two dippings of all affected or suspected sheep to be carried out under the supervision of an inspector of the local authority, and any further dippings or treatment for sheep scab which such an inspector may consider necessary. There must be an interval of not less than 7, and not more than 14 days been the two dippings. This brings the procedure into harmony with the known facts regarding the life history of the sheep scab parasite, and it is a recognition of the fact that the disease cannot be cured by a single dipping. The compulsory general dipping of sheep, which has been in force in the whole of Great Britain since the year 1908, is now abandoned, and in future compulsory general double dipping will be confined to areas in which such a requirement is considered necessary for securing the complete eradication of sheep scab therefrom, or in which there is reason to suspect that the disease may exist unreported.

It is also proposed that in future a number of the Ministry's own staff of veterinary and other inspectors shall be detailed to co-operate with the local authorities concerned, with a view to securing the necessary measure of supervision of the dipping, advise owners as to methods of handling and dipping sheep, and to search the flocks for any obscure cases of scab which might escape detection.

SWINE FEVER.

The following Table shows the number of confirmed outbreaks of this disease during the last seven years:—

Year		Outbreaks
1914	..	4,356
1915	..	3,994
1916	..	4,331
1917	..	2,104
1918	..	1,407
1919	..	2,305
1920	..	1,816

The first year in the Table was the last complete year in which swine fever was dealt with under a plan that was ostensibly a stamping-out one, and involved the compulsory slaughter of diseased and in-contact pigs. This method was continued till September 1915, when the Board of Agriculture abandoned the attempt to eradicate the disease and resolved to be content with less drastic measures which might suffice to hold it in check. Compulsory slaughter was accordingly stopped, and owners were encouraged to employ serum inoculation to diminish the losses among the pigs that had been exposed to risk of infection. The figures for the last four years appear to indicate that the present method of dealing with the disease is effectual in holding it in check, although the reduction in the number of outbreaks is probably largely due to the marked decline in the pig population which occurred in 1917 and 1918 and to the diminished opportunities for infection in markets and fairs in recent years. At any rate it is obvious that serum as at present employed cannot have a direct effect in preventing new outbreaks, although it may act in that way indirectly by making owners less reluctant to report the existence of the disease.

A fact that must not be left out of account in considering the merits of the new method of dealing with the disease is that it involves a great saving to the public exchequer. During the past four years only 3,186 animals were slaughtered by order of the Ministry of Agriculture as diseased or exposed to infection, but in the four years 1911 to 1914 owners had to be compensated for over 140,000 pigs slaughtered for the same reasons.

FOOT AND MOUTH DISEASE.

During the past year 93 outbreaks of this disease occurred in England, a number that has been exceeded only once during the last 36 years, viz.: in 1892, in which the outbreaks numbered 95.

The outbreaks occurred in 22 counties, and their distribution in point of time is shown in the following Table :—

	Periods of four weeks													Total.
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Kent . . .	6	—	—	—	1	—	—	—	—	3	2	1	1	14
Durham .	3	—	—	—	—	—	—	—	—	—	—	—	—	3
Dorset . .	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Essex .	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Hants	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Wilts . .	3	4	—	—	—	—	—	—	—	—	—	—	—	7
Bedford .	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Lancaster .	1	1	—	—	—	—	—	—	—	—	—	—	—	2
Northumberland	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Devon . .	—	3	—	—	—	—	—	—	—	—	—	—	—	3
Flint . .	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Gloucester . .	—	1	—	—	—	—	—	—	—	—	—	—	4	5
Bucks . .	—	2	2	—	—	—	—	—	—	—	—	—	—	4
Oxford . .	—	4	2	—	—	—	—	—	—	—	—	—	—	6
Worcester .	—	—	1	—	—	—	—	—	—	—	—	—	1	2
Norfolk . .	—	—	—	2	—	7	12	4	1	—	—	—	—	26
Sussex, E.. .	—	—	—	—	—	3	—	—	2	—	—	—	—	5
Isle of Ely	—	—	—	—	—	1	—	—	—	—	—	—	—	1
Suffolk . .	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Hereford . .	—	—	—	—	—	—	—	—	—	—	—	—	3	3
Salop .	—	—	—	—	—	—	—	—	—	—	—	—	2	2
Lincoln . .	—	—	—	—	—	—	—	—	—	—	—	—	3	3
														93

The facts indicate that at least 20 of the outbreaks were the result of fresh introductions of the virus from abroad, the remainder being attributable to a spread of the infection from pre-existing outbreaks in the neighbourhood. It is understood that in spite of painstaking inquiry no clue to the origin of the independent outbreaks was discovered. All the outbreaks were successfully dealt with by stamping-out measures, which during the year involved the slaughter of 11,373 animals as diseased or exposed to infection.

RABIES.

Rabies was exterminated in the United Kingdom in 1902, and the country remained free from it during the following 15 years. It was re-introduced in 1918, in which year it was confined to Devon and Cornwall and 98 cases were confirmed. In the following year the cases rose to 150, and these were distributed in 14 different counties. During the past year 42 cases were confirmed, and their distribution is shown in the following Table :—

	Periods of four weeks													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Kent .	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Surrey . .	1	1	—	—	—	—	—	—	—	—	—	—	—	2
Essex . .	—	—	—	1	—	—	—	—	—	—	—	—	—	1
Wilts . .	—	—	—	—	—	—	—	—	6	3	1	1	2	13
Glamorgan. .	—	—	—	—	—	—	—	—	—	9	—	—	1	10
Berks . .	—	—	—	—	—	—	—	—	—	1	4	—	3	8
Dorset .	—	—	—	—	—	—	—	—	—	—	1	3	—	4
Hants .	—	—	—	—	—	—	—	—	—	—	—	1	1	2
Middlesex . .	—	—	—	—	—	—	—	—	—	—	—	—	1	1
														42

As will be seen from the Table, there was a period of over four months during which no case of the disease was detected, and there is reason to suspect that the series of cases which afterwards occurred in Wiltshire and Glamorgan was due to a fresh introduction of the virus, probably in a dog smuggled in from the Continent in order to avoid the prescribed period of quarantine.

PARASITIC MANGE IN HORSES.

The incidence of this disease during the last four years is shown in the following Table:—

Year	Outbreaks	Animals attacked
1917	2,614	4,873
1918	4,463	8,377
1919	5,016	9,861
1920	3,564	3,812

The reduction in the number of outbreaks during the last year is so far satisfactory, but it does not furnish any ground for hope that the regulations now in force will suffice to stamp out the disease. It must be admitted that the drastic measures necessary to secure that result would at present cause more loss to horse owners than the disease.

ABORTION IN MARES.

During the year the following cases of contagious abortion in mares came under notice:—

(1) An agglutination test of the blood of four mares in the same stud showed that one of them was infected. The history of the mares was not known at the time when the test was carried out, but it was subsequently learned that none of them had aborted, and that they were suspected because three of them had failed to breed for three successive years in spite of service by different stallions. The infected mare was one of these. The fourth mare had a full-term foal in 1920, and this was her first foal although she had been served in each of the four previous years.

The fact that the blood test indicated infection of only one of the four mares makes it improbable that the trouble in getting them to breed was attributable to the bacillus of mare abortion, and no clue to the infection of the only mare incriminated by the blood test was obtainable.

(2) In the month of March blood was sent to the Laboratory from two mares that had aborted, one seventeen days and the other three days previously. A third mare had aborted on the day on which the blood was taken from these two mares, but blood was not sent from her. The result of the agglutination test was positive, indicating that the outbreak was caused by the bacillus abortivo-equinus.

There remained in the stud three mares carrying foals, and serum was sent for these. One of them aborted a week later, and the above-named bacillus was cultivated from the body of the foal. Subsequently inquiry elicited the fact that three years previously the same owner had twenty-two mares in foal, and that every one of them aborted. The abortions began in December, 1916, and the last occurred in mares near the normal date for foaling in 1917.

None of these mares was served until 1918, and in 1919 all the foals were carried to full term. Two of the mares that aborted in 1920 were among those that aborted in the previous outbreak.

The first outbreak was attributed by the owner to Argentine mares that were kept for some time on his premises in 1916. During the six months preceding the 1920 outbreak only one mare had been brought on the farm, viz., in February, and that mare carried her foal to full term. She had been at grass with one of the mares that aborted, but never in contact with the others.

(3) In the foaling season, 1920, four brood mares out of ten belonging to the same owner aborted, and the foals of two other mares died soon after birth. The facts were reported at the end of the season, and blood was obtained from three of the mares that had aborted. The agglutination test with the B. abortivo-equinus had a positive result in each case. No facts bearing on the origin of the infection were obtained.

(4) The carcase of a foal that had been born dead on May 3 was forwarded to the Laboratory, where examination showed that it contained large numbers of an organism belonging apparently to the colon group of bacilli. The bacillus abortivo-equinus was not detected. It was subsequently ascertained that in the stud from which the foal came five mares had given birth to dead foals between April 9 and May 3, and two had had live foals. Three of the dead foals were said to have been overdue, and the others were only slightly if at all premature. Each of these mares had foaled normally the previous season, and no new mare had been brought on to the farm during the previous four months.

It has been thought well to give the foregoing particulars, not because they add anything to what was previously known regarding the causes of abortion in mares, but in order to emphasise the fact that when an owner allows an outbreak of abortion to run its course among his mares without taking any steps to arrest it he displays less intelligence than might be expected of him. Many outbreaks might undoubtedly be cut short if every case of abortion in a stud were regarded as of the contagious kind until the contrary has been proved by bacteriological examination of the fœtus or an agglutination test of the mare's blood. Needless to say, in the interval every possible precaution to prevent the conveyance of infection to other mares in the stud should be taken. Members of the Society are reminded that the College invites application for assistance and advice when a case of abortion occurs.

TUBERCULOSIS.

A reproach against owners of cattle in this country is that practically nothing has yet been accomplished in reducing the prevalence of tuberculosis. The number of herds from which the disease has been eradicated is insignificant, and it appears to be probable that the proportion of infected cows in the country remains at not less than 30 per cent. This very fact makes the complete extermination of bovine tuberculosis within any measurable period almost hopeless, but it is certain that many herds might soon be completely freed from the disease with profit to the owners. There is reason to suspect that some of the failures to achieve this object have been due to insufficient knowledge regarding the best method of employing tuberculin for diagnosis, and it is therefore proposed to offer the free assistance of the Research Department of the College, including the necessary tuberculin, to the owner of any pedigree herd who will agree to carry out, as far as may be practicable, the measures recommended with a view to stamping out the disease. As an encouragement to efforts of this kind, the College will when satisfied that any herd has been made actually free from the disease issue a certificate to that effect and authorise its publication.

INFLAMMATION OF THE UDDER IN COWS

In the last Annual Report it was intimated that it was intended to institute an inquiry with regard to the cause and treatment of cases of so-called "garget" in cows, and Members of the Society in whose herds the trouble was occurring were invited to communicate with the College. During the year only a small number of outbreaks were reported, but one of those was of a very serious character. Unfortunately, it had spread extensively in the herd before advice was sought. The inquiry is being continued.

J. McFADYEAN.

Royal Veterinary College,
London, N.W.1.

ANNUAL REPORT FOR 1920 OF THE CONSULTING CHEMIST.

DURING the twelve months, December 1, 1919, to November 30, 1920, 429 samples, or ten in excess of the 419 sent in the corresponding period of the previous year, were forwarded to me by members of the Society for analysis. In addition to these, there were the usual analyses of Cider and Milk in connection with the competitions at the Society's Country Show at Darlington.

The list of samples shows an increase more particularly in regard to linseed cake, cotton cake, basic slag, and soils, no fewer than 56 samples of soil having been forwarded, as against 38 in 1919.

Supplies of feeding stuffs were not by any means plentiful or easily procurable; still, there was hardly the same scarcity as in the previous year. Prices, too, have fallen somewhat, more particularly towards the close of the year.

In respect to fertilisers, there was perhaps not the same difficulty, although both basic slag and superphosphate were hard to procure. Further, a purchaser had but little choice in regard to quality, but had to take what he could get. The qualities of deliveries of basic slag have undergone considerable deterioration of late years, for, whereas, previously, it was quite possible to get deliveries testing 40–45 per cent. of phosphate of lime, it is seldom now that one can get any of even 30 per cent., while the more general average is 20–22 per cent. Even lower qualities—10–16 per cent.—are, not unfrequently, the only ones available. At the same time it is well to remark that, so far as one can judge from experience on the land with these lower qualities, they have answered perfectly well, so that the use of basic slag need not be given up even when only low quality lots are procurable. Of course, where the questions of carriage and of larger quantity required to be used come in, these render the lower qualities not so economical. The fact that the prices of basic slag and of sulphate of ammonia are practically fixed ones, has eliminated any element of competition in these materials.

The prices of other fertilisers have not greatly varied throughout the year, and I have not found it necessary to propose any further alteration in the Tables of Unexhausted Manure Value, as last revised in March, 1920.

Considerably increased attention has been very properly directed to the liming of land, and, in the case of many of the soils which I examined, I found that the need of liming was markedly demonstrated.

On the whole, I must say that cases of adulteration have been fewer than in previous years. The existence of the Fertilisers and Feeding Stuffs Act has, no doubt, acted as a deterrent. At the same time it is recognised that this Act is far from being what it should be. Cases of prosecution that have arisen regarding it have been particularly few, and, in many parts of the country, the authorities have undoubtedly lost heart in putting the Act into operation, partly because of the difficulty of complying with the strict formalities required, and partly because of the difficulty in getting the Ministry's consent to cases in which the local authorities have wished to prosecute. A decided step forward in the way of making the Act more really useful was taken by the Royal Agricultural Society early in 1920. The Society invited representatives of the County Councils Association, the Central Chamber of Agriculture, The Incorporated Society of Inspectors of Weights and Measures, and the Agricultural Analysts' Association, to meet and to consider the position as regards the administration of the Fertilisers and Feeding Stuffs Act. This conference proved very useful, and the members readily came to a clear understanding as to what were the points in which an amendment of the Act was required, or—as seemed to them more advisable—the lines upon which a new Act altogether should be drawn up. These representations were put into form and submitted to the Ministry of Agriculture, and the outcome was that representatives of the above bodies were invited to meet Sir Lawrence Weaver and other officials of the Ministry. At this meeting the matter was gone into very fully, and the various representations made were very sympathetically received. It is to be hoped that definite action will be taken before long by the Ministry, in the direction of introducing a new and improved Act.

During the year, two issues of "Occasional Notes," namely Nos. 8 and 9, in February and June respectively, were made. These, as usual, contained information of considerable value to purchasers of fertilisers and feeding stuffs, and, in the June number, a new item was added in the form of "Queries and Answers," on matters which had been submitted to me as Consulting Chemist of the Society. It will be a matter of great regret, I feel sure, to many members, to hear that the issue of "Occasional Notes" is, on the ground of economy, to be discontinued in the future. The many communications I have received have afforded ample testimony to the appreciation with which these periodical issues—filling, as they do, the blank between the yearly issue of the *Journal*—have been received by members generally. It appears to me an unfortunate step to give up useful work of this kind at such a period.

A. FEEDING STUFFS.

The fall in the price of linseed cake has, no doubt, been accountable for the more extensive employment of this class of cake. Starting with £25 a ton, the prices have gradually gone down to as little as £18 12*s.* 6*d.* As a rule, also, the quality has been good, and the cakes pure. Cotton cake has not undergone a great fall of price, but has varied from £14 to £12 15*s.* per ton. Decorticated cotton cake and meal have been of varied quality and price, and, as noted in No. 8 of "Occasional Notes," there has been a marked deterioration in it, the distinctions which should exist between "decorticated" and "undecorticated" cakes and meals being now very indefinite. Earth-nut cake has, perhaps, been one of the most useful, and, at the same time, most economical of all feeding cakes. Its price has varied from £18 to £16 per ton. Palm-nut and coco-nut continue to come forward, both as cakes and meals, though the use of these does not appear to have largely extended; nor does the oil-extracted palm-nut meal seem to be generally favoured. Experiments conducted with it at the Woburn Experimental Farm, in conjunction with others simultaneously carried on at Wye College, do not show favourably for this oil-extracted meal as a food for cattle, as against cotton cake. Sheep, moreover, refused it altogether, and pigs did not thrive at all upon it.

Towards the end of the year, maize and beans experienced a marked fall in price which brought these, and the various products derived from them, into more general use. On the other hand, wheat offals generally became dearer and scarcer, the prices ranging from £13 10*s.* per ton, early in the year, to £16 towards the close.

1. *Linseed Cake.*

Though purchases have generally been of good quality and the cakes pure, cases have occasionally occurred to the contrary. Such is the following:—

Moisture	8·89
Oil	11·16
[1] Albuminous compounds	29·25
Mucilage, sugar, and digestible fibre	31·15
Woody fibre (cellulose)	8·39
[2] Mineral matter (ash)	11·16
	100·00
[1] containing nitrogen	4·68
[2] including sand	4·49

This was a cake purchased, in December, 1919, of an Agricultural Trading Society in the South of England, the price being £25 per ton. The amount of sand is very high.

In a second instance, which is reported in full in "Occasional Notes," No. 9 (June, 1920), two tons of Plate linseed cake, sold at £22 15*s*. per ton, were found to contain a considerable amount of castor oil bean. As a consequence of taking this cake, a number of bullocks, to which it had been given, suffered seriously. Ultimately an allowance of £132 6*s*. was made by the vendors, who, it turned out, had obtained the cake through Government agents, and they were, in their turn, compensated by the latter.

2. *Decorticated Cotton Cake.*

A fair sample gave the following analysis :—

Moisture	10·58
Oil	8·66
[1] Albuminous compounds	34·62
Carbohydrates, &c.	32·40
Woody fibre (cellulose)	7·82
[2] Mineral matter (ash)	5·92
	100·00
[1] containing nitrogen	5·54
[2] including sand	·36

This cost, in December, 1919, in the eastern counties, £21 15*s*. per ton only, carriage paid. This price was considerably below the then ruling one of £25 10*s*. per ton, and the cake was also better than usual, containing a comparatively low amount of fibre.

On the other hand, the following two cakes, though sold as "Decorticated," were really little better than ordinary undecorticated cake.

	A	B
Moisture	12·17	9·92
Oil	5·86	6·69
[1] Albuminous compounds	24·37	33·43
Carbohydrates, &c.	31·07	32·40
Woody fibre (cellulose)	21·54	12·92
[2] Mineral matter (ash)	4·99	4·64
	100·00	100·00
[1] containing nitrogen	3·90	5·35
[2] including sand	·19	·06

"A" cost £22 5*s*. per ton, and "B" £21 10*s*. per ton, the price for decorticated cotton cake being then £19 per ton only. B was called "Peruvian" Cotton Cake.

3. *Coco-nut Meal.*

In one instance this was sold as a meal for pigs, and cost

£9 10*s*. per ton. It proved to be oil-extracted coco-nut meal, and was very insipid in taste. It gave on analysis:—

	Per cent.
Oil	1·79
Albuminoids	22·00
Carbohydrates	45·38

4. *Feeding Meals.*

Moisture	12·19
Oil	5·82
[1] Albuminous compounds	36·62
Carbohydrates, &c.	21·03
Woody fibre (cellulose)	12·12
[2] Mineral matter (ash)	12·22
	100·00
[1] containing nitrogen	5·86
[2] including sand	·69

This meal was offered at the price of £26 per ton, under the name of "Milk Springer Meal," and was said to have the property of doubling the yield and quality of the milk. The analysis reads quite well, the material being especially high in albuminoids. It possessed, however, a bitter taste, which, I found on examination, to be derived from hops and yeast refuse which had been used in the making up of the meal. I should call the price of this distinctly high.

5. *Brewing Products.*

	A Dried Distillers' Grains	B Distillery Waste	C "Cerameal"
Moisture	11·35	67·44	13·18
Oil	4·86	2·26	·66
Albuminoids	15·56	20·81	38·93
[1] Carbohydrates, &c.	50·93	6·44	39·21
Woody fibre	13·38	2·89	—
[2] Mineral matter	3·92	·16	8·02
	100·00	100·00	100·00
[1] containing nitrogen	2·49	3·17	6·23
[2] including sand	2·76	—	·06

A was not a good sample, and did not compare at all well with dried grains as generally sold. The sample contained a good deal of unaltered starch and also barley husk which had not undergone any treatment. A good sample of dried distillers' grains should contain more like 10 per cent. oil and 28 per cent. albuminoids. The material possessed very little aroma.

B cost 45*s*. per ton on rail in London. It was very wet, but not at all acid. The price perhaps is not excessive, but it would not stand the paying of carriage to any extent. This was intended as a food for pigs, but, inasmuch as the starch was mainly removed, I should not consider it to be suitable by itself, but a substance that would require supplementing with other material more of carbohydrate nature.

C cost £16 per ton, carriage paid, and appeared to be, practically, dried yeast.

6. *Miscellaneous Feeding Materials.*

	A Oat Pollards	B Coffee Waste	C "Fenugreek"
Moisture	10·55	6·62	10·70
Oil	1·40	20·13	4·55
[1] Albuminoids	12·18	13·93	22·87
Carbohydrates, &c.	41·84	29·60	49·56
Woody fibre	18·46	23 63	7·11
[2] Mineral matter	15·57	6·09	5·21
	100 00	100 00	100·00
[1] containing nitrogen	1·95	2·23	3·66
[2] including sand and silica	11·28	·33	1·09

A. The description "Oat Pollards" was a misnomer, for the material contained very little oats, and was just sweepings or screenings. It consisted of chaff, a little wheat, oats, and a quantity of weed seeds, among which were polygonum and wild mustard.

The analysis shows the material to have also a great deal of siliceous matter, and it certainly was not worth getting at the price of £6 10*s*., at which it was sold in the eastern counties.

B. This was the skin or "parchment" of the coffee berry, together with some bits of coffee and fatty extract from the berries. Although it was proposed to use it for pigs, I do not fancy it for the purpose, because of its being poor in carbohydrates and not being a readily-digested material.

C. I do not remember having previously put out an analysis of Fenugreek, and this may, accordingly, be of interest.

7. *Mangels.*

A member sent me six roots of a variety of mangels. This variety was supposed to be of specially good quality, and was stated, in an accompanying circular, to give as much as 12 per cent. of sugar. My analysis of the roots was, however:—

Water	90·99
Albuminoids	·94
Sugar	3·42
Other soluble carbohydrates	1·76
Crude fibre	2·10
Mineral matter	·79
	100·00
Nitrogen	·15

The mangels, accordingly, instead of being very high in sugar, were just the reverse.

8. *Jerusalem Artichokes as a Fodder Crop.*

A member having grown Jerusalem artichokes on his land, and intending to make this into silage, if it were at all suitable, sent me some of the stalks and leaves in order that I might make an analysis of them. I thought it advisable to exclude the thick stems, as these would hardly be capable of utilising for feeding. The analysis, accordingly, was made from the leaves and the thin stalks only, and it gave the following results:—

	A In natural state	B Dried at 100° C.
Moisture	76·58	—
Ether extract	·19	82
[1] Albuminous compounds	3 57	15·25
Carbohydrates, digestible fibre, &c.	13 21	56·33
Woody fibre	3·84	16·42
[2] Mineral matter	2·61	11·18
	100 00	100·00
[1] containing nitrogen	·57	2·44
[2] including sand	·09	·40

As far as one can judge, a material such as this ought to be a distinctly useful one for silage purposes, especially when bearing in mind what a heavy cropper the Jerusalem artichoke is.

B. FERTILISERS.

Superphosphate has been somewhat hard to procure. The price of it also has risen to some extent. The quality generally procurable now is 30 per cent. "soluble phosphate." The particular features concerning the sale of basic slag have already been touched upon.

Of other phosphatic materials, bones have been rather cheaper, and fish manure has hardly been in evidence. The price of raw bone meal, which was £18 10*s*. or more per ton at the beginning of the year, has gone down to £16, but both this and fish meal are still relatively dear.

Among *nitrogenous manures* comparatively little has been heard of nitrate of lime, nitrate of ammonia or even cyanamide. Sulphate of ammonia continues to be the most generally used of the nitrogenous materials. Its price has fluctuated between £22 and £24 13*s*. 6*d*. per ton, while nitrate of soda, which was, in the earlier part of the year, £26 12*s*. per ton, has come down markedly in price to £21 10*s*.

Supplies of potash salts have come forward, and have been used to a more considerable extent. These have come mainly from the Alsace-Lorraine deposits, the deliveries available being generally sold on a basis of containing either 14 per cent. of potash, 20 per cent. or 30 per cent. The revival of the imports of potash salts has led to the dropping off, to a considerable extent, of flue dust as a source of potash supply. This material was never very popular, and the results obtained with it have generally been of an uncertain nature.

There has been a considerable demand for lime of different kinds, and along with this has gone a raising of the price, which now reaches 58*s*. per ton for good burnt lime. There has been some disposition to try carbonate of lime as a source of lime supply, and it would certainly appear desirable to obtain, by practical experiments, more information as to the value of this, and of burnt lime, as also of magnesian lime and magnesian limestone.

1. *Ground Mineral Phosphates.*

These have, in not a few cases, been tried, and among them is the following, known as "Ephos Phosphate":—

Moisture	1·94
Water of combination	1·94
[1] Phosphoric acid	28·84
Lime	46·26
Carbonic acid, etc.	15·86
Sand	5·16
	100·00
[1] equal to tribasic phosphate of lime	65·01

The price of the above was £15 per ton, which, in comparison with basic slag, reads decidedly high.

2. *Lime.*

The following are analyses of two samples of lime—both of them of low grade.

	A	B
Oxide of iron and alumina	6·64	16·80
Lime	63·94	47·42
Magnesia	2·06	17·76
Silica	15·48	13·81
Water, carbonic acid, &c.	11·88	4·21
	100·00	100·00

A contained only 64 per cent. of lime and was, to a large extent, "slaked." It cost 48*s*. per ton.

B, while having less than 50 per cent. of lime, contained also a considerable amount of magnesia and of silica. It cost 65*s*. per ton, which made it, as compared with good ground lime (then quoted at 62*s*. per ton delivered), decidedly dear.

3. *Carbonate of Lime.*

	A		B
Moisture, water of combination, &c.	·83	..	12·08
Oxide of iron and alumina	1·08	..	·35
Carbonate of lime	96·15	..	85·26
Magnesia	·56	..	1·47
Silica	1·38	..	·84
	100·00	..	100·00
Lime	53·84		47·74

A cost 25*s.* per ton on rail, and was a decidedly good sample.

B was a refuse lime, obtained in water-softening operations, and was sold as "Precipitated Chalk." It cost £5 per ton. Such a material, although it was good and very finely powdered, is, of course, too expensive for agricultural use. I ascertained that carbonate of lime recovered in this way may often give as much as 99 per cent. of carbonate of lime, and is used as "precipitated chalk" for pharmaceutical purposes, &c., often fetching as much as £10–£12 per ton.

4. *Compound Manure.*

A fertiliser under the name of "Compo-Lactic Fertiliser" was sent to me by a member. It cost £11 per ton and was used as a fertiliser for fruit trees and vegetables. The analysis was as follows:—

Moisture	15·23
Organic matter	76·46
[1] Phosphoric acid	3 04
Lime	3 36
Alkalies, &c.	1·51
Sand	·40
	100·00
Nitrogen	11·39
equal to ammonia	13·85
[1] equal to tribasic phosphate of lime	6·64

The manure was quite a good one and the price was not out of the way.

5. *Sud Cake.*

	A	B
Water	20·54	34 62
Fat	7·73	24·87
Other organic matters	41·90	
Oxide of iron, &c.	8·80	6·93
Sand	21·03	33·58
	100 00	100 00
Nitrogen	3·16	2 04
equal to ammonia	3 84	2 48

A. This cost 45*s*. per ton, f.o.r., and was called "degreased." The analysis, however, shows that it was far from being "degreased." The price, with carriage also added, made it rather dear.

B was sold as "Ground Sud Cake," and cost 55*s*. delivered in Lincolnshire. According to the analysis it was dear at the price, and was inferior to A. The purchaser informed me that no guarantee was given him, and the following statement accompanied the invoice:—

"This material is not sold by us as a fertiliser of the soil. But, for protective purposes, we declare that it contains 1·0 per cent. Nitrogen."

Such a statement as this is an evasion of the Fertilisers and Feeding Stuffs Act, and, in an amendment of the Act, steps should be taken to prevent the use of such misleading statements.

6. *Potash Materials.*

	A Cotton Seed Ash Per cent.	B Flue Dust Per cent.
Phosphoric acid	25·73	—
equal to phosphate of lime	56 22	—
Potash	20 69	14·28
equal to sulphate of potash	38 29	26 43
Lime	7·15	—
Silica	10 98	21·70

A was a material costing £22 10*s*. per ton, and was stated to be the ash from cotton seed after using the same for fuel in the East. The material was a very concentrated one, and might well be used with more bulky and poorer materials so as to dilute it, for it contains more potash than would ordinarily be needed for agricultural crops. The price could hardly be called excessive.

B was a better sample than usual, and not at all dear at the price charged, namely, 80*s*. per ton.

7. *German Salt.*

This was stated to be salt used by fish curers at Yarmouth and to have come from Germany. It was sent to me in the expectation of its possibly containing some potash, and this, as the analysis shows, proved to be the case, and made the price charged, namely, 45*s*. per ton, quite reasonable.

Moisture	1·71
Sulphate of lime	4·10
Sulphate of magnesia	·34
Chloride of magnesium	·38
Chloride of sodium	88·96
[1]Chloride of potassium	4·49
Sand	·02
	100·00
[1] containing potash	2·84

8. *Soot.*

This continues to be of variable quality. The following is the analysis of a quite good sample, though it was rather damp.

Moisture	36·58
Organic matter and salts of ammonia	49·16
Oxide of iron, &c.	6·64
Sand	7·62
	100·00
Nitrogen	3·11
equal to ammonia	3·78

The price of this was £5 10*s*. on rail, which must be considered rather high for a sample containing so much moisture.

C. MISCELLANEOUS.

Soil needing Liming.

A member of the Society living in Warwickshire sent me a sample of soil from a field which had been in turf and had been ploughed up in February, 1918, by order of the Government. It was planted with oats in the spring of 1918, but the crop was a very poor one, and the wheat, sown in the autumn of the year, also failed, so that barley was drilled in the spring of 1919. The resulting crop was again very inferior, so that, in 1919, potatoes were put in instead. This crop proved quite good, although in a portion of the same field in which the potatoes were, but which was drilled with swedes, the swedes "went off" almost entirely. In consequence of this it was considered advisable to send me a sample of the soil. The analysis was as follows:—

(*Soil dried at* 100° *C.*)

Organic matter and loss on heating	6·47
Oxide of iron	3·52
Alumina	3 48
Lime	·10
Magnesia	·46
Potash	·45
Soda	·44
Phosphoric acid	·16
Sulphuric acid	·09
Insoluble siliceous matter	84 83
	100 00
Nitrogen	·251

The soil was a red-coloured sandy loam There was about 7 in. of top soil, which was rather heavier than the rest, this being followed by a very sandy sub-soil. The analysis shows very clearly the need of lime, and the absence of this would, in my opinion, fully account for the failure of the corn crops and more especially the swedes also, while, on the other hand, potatoes, a crop not dependent upon lime, would do very fairly.

The following is a list of the samples submitted to me by members during the twelve months December 1, 1919, to November 30, 1920.

Linseed cakes and meals	26
Cotton cakes and meals	21
Compound feeding cakes and meals	86
Palm-nut cakes	8
Ground-nut cakes	3
Cereals, offals, &c.	47
Superphosphates	6
Compound manures	16
Raw and steamed bones	4
Fish meal	2
Basic slag	35
Nitrate of soda	1
Sulphate of ammonia	12
Flue dust	3
Potash materials	8
Shoddy, wool dust, &c.	7
Refuse manures	10
Lime, chalk, &c.	15
Waters	17
Milk, butter, &c.	26
Soils	56
Miscellaneous	20
Total	429

J. AUGUSTUS VOELCKER.

1, Tudor Street, E.C.4,
January, 1921.

ANNUAL REPORT FOR 1920 OF THE BOTANIST.

SEED TESTING. (110).

THE requirements with regard to seed-testing were very similar to those of last year, the numbers of samples for the two years being practically identical. Most of the samples tested were home-grown, as was to be expected, since purchased seeds carry with them guarantees as to purity and germinating capacity. In this connection it should be noted that the Government Seed Testing Station has now abandoned the Irish and adopted the so-called Universal or Continental system of analysing grass seeds, and in consequence the figures for purity and germinating capacity form a real guide as to the value of the seed and the quantities required for sowing. The majority of the seeds were those of the cereals. The wheat samples, as a whole, were disappointing, for the cold, sunless July and August were unfavourable for the full development of the grain. Several were also contaminated with bunt. Oats samples were more satisfactory and germinated well in spite of the fact that much of the grain was small and somewhat pinched. The various clovers were only represented by six samples, roots by two samples of mangold seed, both too small for accurate analysis, and grasses by three samples of rye-grass.

WEEDS AND POISONOUS PLANTS.

Eighty-three specimens of weeds were reported on during the year. Those sent in on more than six occasions were spurrey, sheep's sorrel, knapweed, rest-harrow, black bent and dyer's weed, and on at least three occasions ragwort, sowthistle, corn-buttercup, wild radish and *Bromus commutatus*. The last mentioned is now becoming very common in fields of winter oats. Inquiries into its occurrence almost always show that its seed has been introduced with seed oats from the south of England, especially perhaps from Hampshire. In the course of one of these the vendor disclaimed all responsibility for selling foul seed because " winter oats for some unknown cause often degenerated to this wild form." Many dealers appear to have some difficulty in separating seeds of this weed from oats, a difficulty they would either overcome or else avoid, by paying attention to the purity of seed crops, if buyers systematically rejected contaminated samples.

The list contains the following more or less unusual weeds :—
Penny cress (*Thlaspi arvense*), a weed which is rare in many

parts of the country but abundant in a few localities; purging flax, a species which, though common, is often overlooked; dodder on flax; melilot in abundance in a crop of kidney vetch; corn-cockle amongst autumn vetches and darnel, the seeds of which are poisonous, amongst oats. Reports were also sent to Members on the following poisonous plants .—Hemlock, meadow saffron and yew.

PLANT DISEASES. (75.)

Late in the spring there was an unusual and wide-spread epidemic of "wither-tip" on the young shoots of plums. The attack was so severe that many orchards were apparently crippled for years, but as the season went on the trees, for the most part, made a better recovery than seemed to be possible. Apple-mildew again proved to be very prevalent and it looks as if this disease was increasing in quantity and in the severity of its attacks from year to year. One package of diseased shoots from Worcestershire and a second from Wisbech were of some interest, for the mildew itself was attacked by another fungoid parasite, Cicinnobolus. But its capacity for spore formation did not appear to be seriously affected by this disease for the twigs and foliage were thickly covered with the spores of the mildew. Where steps are taken to keep the trees free from disease as soon as it appears in the early summer, there is no great difficulty in preventing the mildew attacks from becoming serious. The procedure is simply to cut off infected shoots as soon as they are detected and burn them. If left on the trees the parasite matures crops of spores, and it is almost a certainty that in the following season many more of the young shoots will be attacked.

Other diseases of fruit reported on were leaf-scorch in cherries, mildew and curl in peaches, apple-scab, bitter rot of apples, apple-canker, American gooseberry mildew and Botrytis in the crowns of strawberry plants.

Relatively few examples of cereal diseases were sent in for examination. One of the more interesting consisted of a bunch of ears of the wheat Benefactor infected with bunt. The sender's attention had been called to these by the fact that they were appreciably longer and more loosely set than the normal ears of this variety. This lengthening of the ear when bunt is present occurs in some of the denser-eared varieties of wheat, but not in all. At present no explanation of the phenomenon can be offered. Bunted wheat is far commoner than it should be. In part this is due to the fact that a good deal of the grain sold for seed purposes is infected. Buyers should be more on their guard, and if a single bunted grain can be detected in a seed sample, that should be a sufficient reason for rejecting it.

The reason for this apparently drastic course is that many vendors are too prone to assume that wheat can be adequately cleaned by the simple process of blowing out such grains. But whilst it is true enough that the spore-filled grains (bunts) can be removed in this manner, no wind current will dispose of the myriads of spores which inevitably find their way into the grooves of the grains or the brushes of hairs at their tips during the threshing of the crop. Neither will dressing with a copper sulphate solution, unless carried out more efficiently than is ordinarily the case, ensure a clean crop by killing off these spores.

Mildew was again abundant in wheats and oats. Reports were sent to Members on the following diseases:—On potatoes, "curl," corky scab, and "black-leg"; on mangels, rust; on red clover, rust and mildew; on beans, rust; on sainfoin, clover sickness; on peas, mildew; on cattle cabbage, heart-rot; and on forest trees, various rots mainly due to attacks of species of Polyporus.

GENERAL INQUIRIES. (122.)

A week or so before harvest each day's post brought specimens of wheat ears or an occasional specimen of barley, and the inquiry whether, as they differed from the main crop, they were indications of the varieties "reverting." Whether this unusual batch of inquiries was the result of some article in the agricultural press which has escaped my notice, or not, I cannot say. But in every case the "rogues" were nothing more than stray plants of well-known varieties. It is practically certain that the admixture had been effected by threshing machines. One example, at first a little mysterious, was provided by a Member who had sold a portion of a crop of Wilhelmina for seed and retained a portion for his own sowing. His crop contained an abundance of "rogues" of either Square Head's Master or Standard Red wheat—it was difficult to say which—whilst the crops growing from the grain he had sold were free from this impurity. Though it was impossible to obtain conclusive evidence on the point the probability was that he had reserved for his own planting the first few sacks from an uncleaned threshing machine, and that these had washed out most of the grain the machine contained before it started on the Wilhelmina crop. The latter "run" was consequently pure. The whole question of "reversion" is interesting. As far as my experience goes practically every case brought to my notice owes its origin to the admixture of some other variety. In a few cases, however, the "reversion" is due to the marketing of unfixed hybrids, with the result that bearded wheats have appeared in a crop reputed to be beardless, or white grains in samples which should have been red. Such matters are, or should be, well within the control of the seedsmen, for hybrids ought to be as stable as the old varieties of the cereals Whether, when admixture and the presence of unfixed hybrids are excluded, there is a residue of genuine "reversions" is questionable.

The number of inquiries concerning orchard problems was unusual. Several Members had considered the advisability of fruit-growing as a minor farm industry, and wrote for particulars regarding the most profitable varieties for planting. But the difficulty of obtaining sufficient supplies of young trees put an end to the matter in most cases. One, however, not readily baulked by a difficulty of this sort was prepared to raise his own if stocks could be obtained.

Supplies of quicks for hedgerows also appeared to be scanty, and instructions for raising them from seed were sent to a Member who had failed to obtain a sufficient quantity at a reasonable rate.

Several inquiries on the cropping of very light sandy soils were received, and the growth of rye, buckwheat, kidney-vetch and lupins was recommended for certain purposes. Information was also again required on the preparation of silage, and mixtures of oats and tares were prescribed for both autumn and spring sowing.

The whole list of general inquiries is too extensive to quote in detail: it includes the usual questions on the methods of preparing various fungicides, on mixtures for temporary grass land, on the special characteristics of varieties of the more important crops, on the management of the flax crop and the disposal of its straw, &c., and a few unusual inquiries on such subjects as the value of yarrow in pastures, the formation of tubers on the haulms of potatoes, and the possibility of growing ergot of rye as a drug crop.

R. H. BIFFEN.

School of Agriculture,
Cambridge

ANNUAL REPORT FOR 1920 OF THE ZOOLOGIST.

INTRODUCTION.

THE following Report aims at indicating the insect attacks with regard to which advice has been most frequently sought during the past year, with notes of points of special interest as occasion arises. In most cases the pests are well known, and there is little new to be said about them. In some, however, there have either been circumstances which make the attacks somewhat unusual, or new facts have become known bearing on the life-history of the insects concerned. As is always the case, the applications received have closely reflected the weather conditions during the year. In the spring and early summer the dry weather pests—turnip-fly, red-spider, &c.—were naturally abundant, and caterpillars of all kinds were extremely active. With the July rains there was a remarkable change, and these pests disappeared as if by magic. Not only did most caterpillar attacks cease, but there was a notable paucity of insects of any kind on the wing, and this continued throughout the autumn. Entomologists not concerned with economic pests, but solely bent on collecting, found the season extremely unprolific. Pests already established within the tissues of plants, or busy at their roots, were, however, unaffected, and though few insects were to be observed flying, it by no means followed that they had ceased to be injurious. Aphis of various species were perhaps the most prominent pests on the whole, and in many cases the leaves of the infested plants were so curled by the time the wet weather arrived that the insects were protected from the heavy rains which would have cleared them off at an earlier stage. Among forest pests the most serious has been the *Chermes* of the Douglas fir and the Sitka spruce—the very trees which foresters would most desire to flourish unchecked in view of the extent to which they have been planted in recent years.

Cereals.—All the ordinary corn pests recurred to some extent during 1920, gout-fly in barley being, perhaps, the most conspicuous. The spring attack of frit-fly in oats was apparently less severe than usual, and though some cases of damage by the second brood to the grain were reported from the central counties, elsewhere the July rain seems to have prevented its occurrence. Attack by this fly on winter wheat is now observed annually. As stated in last year's report, it is established that the preceding rye-grass is the usual source of infestation. Living larvæ of the fly are still to be found in the rye-grass long after it has been ploughed in, and they migrate to the wheat when it is ready. Experiments at Cambridge fully confirmed the belief that wheat after a bastard fallow is much less likely to suffer from frit-fly than wheat after rye-grass.

Wheat bulb-fly took its usual toll of wheat this year. I also met with it in winter barley—the first time, as far as I know, that it has been observed in this crop. For a long time it has been recognised that the worst attacks are after fallow, though the explanation of this fact is still obscure. The previous year's cropping of infested fields of wheat clearly influences its liability to bulb-fly attack, though it is often difficult to reconcile the results obtained in different cases. Here is a case of a thirty acre wheat field at Saffron Walden, fairly typical of common experience:—

Acres	Cropping and treatment 1919	Bulb-fly, 1920
6	Mangold.	Slight attack
12	Fallow; ordinary ploughed and dunged .	Moderate attack
10	Fallow; subsoiled and dunged . .	Crop lost
2	Fallow; ploughed 20 in. deep; not dunged	Bad attack

Every bad attack reported seems to be after fallow, and land heavily cropped the previous summer often goes quite free. In some cases it seems as though the application of manure increased the chances of fly attack; in others, as in the case cited above, there is little indication of this.

In the Annual Report of the Zoologist for 1916 reference was made to our lack of knowledge of the early life of this pest, and to the unsuccessful attempts that had been made to throw light upon the matter. It was related how the Russian Entomologist, Kordiumoff, had published an account of what he believed to be the first-stage larva of the bulb-fly, but how there was reason for believing that he was mistaken, and was really dealing with quite a different insect.

Experiments carried on at Cambridge this year by Mr. Petherbridge have been more successful than those previously attempted, and a number of wheat bulb-flies in captivity laid eggs in the middle of July. So far (November) only three of these eggs have hatched, but the larvæ (or grubs) obtained from them are, as was expected, quite different from those described by Kordiumoff. The unhatched eggs seem perfectly healthy. Possibly they do not hatch normally till the spring, but that remains to be seen.

As far as the experiment has gone it tends to confirm the view that the flies select bare ground, and not plants, on which to lay their eggs. In the cages they were given the choice of rye-grass, wheat, and bare soil, and all the flies which were observed ovipositing did so on the bare soil. If this is really the habit of the fly, it is very remarkable, though perfectly in accordance with farming experience. There was always some idea that there might be sufficient grass in a fallow for the flies to lay their eggs on, since insects whose grubs feed on certain definite plants almost invariably lay their eggs on or near those plants. Indeed if they do not they are doomed to destruction unless their grubs are so active that they can seek their food at a distance, and this is not the case with fly grubs, which are entirely leg-less. To lay eggs on bare ground, on the chance that a corn crop will appear there during the ensuing winter, would obviously be a suicidal policy except under civilisation, for in wild nature there is nothing comparable to a bare fallow. If the corn crop is really the fly's objective, its method of proceeding can only be explained as the result of ages of land cultivation. There is, however, another possibility. It may be that the grubs did not originally feed upon living plants, but upon decaying vegetable matter—of which they might find sufficient for their purpose in soil destitute of living vegetation, and that the attack on the subsequent wheat crop is a change of habit on the part of the insect. The probability of this is indicated by the fact that most of the flies of the particular group to which the wheat bulb-fly belongs do not attack plants but are "saprophytic"—devourers of decaying matter.

Wheat-midge was the subject of inquiry in a few cases. It was also a rather common experience to find a large number of sterile ears in a wheat crop, and though thrips was generally present and may have been the cause, it is possible that some other agency had been at work.

Grass.—There was no recurrence of the antler moth this year. Past experience has taught us not to expect it in the same region two years running, but no reports of its appearance in any district reached the Department. Local damage to grass by leather-jacket, wireworm, and summer-chafer grubs was complained of, but one of the worst cases of injury proved unexpectedly to be due to cockchafer grubs. These pests are much more often destructive in forest nurseries than in open grass land, which is far more subject to attack by the smaller species, *Rhizotrogus solstitialis*, the summer chafer. Indeed the cockchafer (*Melolantha vulgaris*) is necessarily confined to a well-wooded district, as abundant foliage is necessary for the mature beetle.

An unusual complaint concerned a ten acre meadow infested by numberless ant hills which had been radically treated—every mound being dug up and removed at great expense—two years ago without any diminution of the nuisance. Such treatment is generally effective, as it destroys the nest, and turns up the ants and their "eggs" to the birds, and the removed soil is, of course, in admirable condition through the working of the ants. It is not easy to suggest any measure likely to be effective, and I should be greatly obliged for any information from one who has successfully tackled a similar problem. Possibly a heavy dressing of gas-lime might improve matters—at the expense of a year's crop. The grass in the following year would probably be much improved, and large numbers of the insects killed.

Pulse.—1920 was a favourable year for pea crops, so that it appears at first sight rather odd that every one of the recognised pea pests was inquired about at one time or another. Of course the explanation is simple. If a crop is cleared off at the outset by *Sitones* weevils it will not be troubled by later pests.

Sitones weevils did some harm in the early stages. Later, cases of pea thrips were reported, and attacks by the pea-midge and pea-moth followed. The pea-moth (*Grapholitha pisana*) was particularly harmful, especially in late peas, a large proportion of the pods being infested.

Bean aphis was bad in some districts, though less destructive than usual in others. Much of the bean seed this year was infested by the bean beetle (*Bruchus*).

Roots and Garden Vegetables.—Early in the season flea-beetles were very destructive to various crops, three species being principally concerned: *Phyllotreta nemorum* on turnips, *P. concinna* on mangolds, and *P. affinis* on potatoes. The pygmy beetle was responsible for the loss of mangolds in some cases, but more frequently the damage was attributable to flea-beetles. It was in connection with the same crop that most of the complaints of millipedes were received.

There were fewer inquiries than usual about root-fly maggots, but slugs, snails, wireworm, and especially surface caterpillars, did much harm. Other pests reported were carrot-fly (on both carrots and parsnips), onion-fly, celery-fly. and asparagus-beetle, which was more abundant in some gardens than I remember to have seen it before.

Of the cabbage caterpillars the one that gave most trouble was that of the cabbage moth (*Mamestra brassicæ*), not only because of its habit of boring into the heart of the vegetable, but because it is much more resistant to insecticides than the caterpillars of the white butterflies.

Fruit.—A large proportion of the enquiries received during 1920 had reference to fruit pests, but they present few points of special interest. The lackey-moth reappeared to a slight extent, but was nothing like so formidable as during the previous season. Indeed, caterpillar attacks were not very general, and for the most part ceased on the advent of the wet weather in July. Very large numbers of eggs of red-spider had been noticed on fruit trees in the spring, but attacks did not materialise to the degree expected. Aphis, on the other hand, was very destructive, and was the outstanding fruit pest of the season.

Apple-blossom weevil did much harm in some districts. Pear-midge was reported from a few localities, but the complaint was not general. Some damaged plums were found to be attacked by the caterpillar of the small moth *Opadia funebrana.*

Saw-fly on gooseberries, "big-bud" on black currants, and raspberry-beetle were common everywhere. The only case of injury to bush fruit at all unusual was one in which the failure of logan-berries was found to be due to "leather-jacket," numerous half-grown grubs of *Tipula* being found at the roots of each plant.

Forest pests.—Very few inquiries were received with regard to insects injurious to forest trees, and only one of importance. This related to a *Chermes* infesting the Douglas fir, and as, though it was only once brought to the notice of this Department, it has been the most important forest pest of the year, it is desirable to insert some account of it.

In 1913 Messrs. A. C. Forbes and A. Henry were the first to recognise in England a *Chermes* found in Douglas fir in the New Forest as being identical with the *Chermes cooleyi* var. *loweni* of North America. Since that date the pest has become widely spread, and is now serious. In the States the *Chermes* alternates between the Douglas fir and certain spruces—just as our larch-bug alternates between the larch and the spruce. In England its alternative plant is the Sitka spruce. Now the Douglas fir, because of its suitability for dry soils and sheltered situations, and the Sitka spruce, because it flourishes where the soil is wet and the position exposed, have been largely planted of late years in the British Isles.

Mr. G. R. Speyer (*Gardener's Chronicle*, July 17, 1920) states that the attack on the spruce is almost altogether confined to the lower branches, and continues—"were it practicable to remove or even to spray the lower branches of the spruce in June and July these pests might easily be controlled." Mr. A. Henry emphasises the great importance of obtaining seed from vigorous trees in suitable condition, and suggests that much benefit would accrue from official supervision of the seed collectors in N. America.

The other forestry pests inquired about included willow-scale, ash-bark beetle (*H. fraxini*), hazel gall-mite, poplar longicorn, and wood-wasps (*Sirex*).

Miscellaneous Notes.—Wasps are often the subject of inquiries, and have been frequently discussed in the Miscellaneous notes. Here is a new observation, for which I am indebted to Col. Stanyforth.

In 1919 and again in 1920 a number of "white-backed" wasps had been observed. It was noticed that these wasps were particularly savage—"attacking any person going within two or three yards of the nest." Very naturally they were supposed to be a peculiar species, new to the district, and specimens were sent to me for identification at the end of September. I found them to be the common species, *Vespa vulgaris*, but the "white-backed" specimens had the head and thorax encrusted with a white powder which on examination under the microscope, proved to be pollen. I did not recognise the pollen, but suggested to the Agent, Mr. Cass, that he should take note of any flowers especially visited by the wasps, and should send me specimens of them. He very kindly made a special search, and found a wasps' nest in a bed of balsam (*Impatiens noli-me-tangere*), the pollen of which I found to be identical with that I had previously scraped from the wasps' backs. Again numerous white-backed specimens were noticed, and again it was observed that they were far more irritable than the others.

Wasps rear their grubs, of course, almost entirely on insect food, but the wasps themselves are, as every one knows, exceedingly fond of anything sweet, and are strongly attracted to ripe fruit and to the nectaries of various flowers. The very plentiful and adherent pollen of the balsam, acquired in their search for the nectar, altered their appearance and seems to have had a bad effect on their tempers. It was not till the second week in October that the pollen grains were traced to their source, and the nest was still in full activity. This is an unusually late date, and an additional indication of the prolongation of the summer season, for in ordinary years the nests become extinct and the queen wasps depart to seek their winter shelter towards the end of September.

Early in the year I received for identification a number of insects which were found in mail bags returned to head quarters from the various battle fronts—France, Salonica, Mesopotamia, &c. They proved to be the common body-louse, and some of them were still living. Why lice should be present in mail bags was not at first obvious, but it transpired that these bags were in great demand among soldiers as weather-proof receptacles for clothes—or even for sleeping in. No doubt they had contained louse-infested clothing, and had themselves become infested. It was very unfortunate that the mail bags had been so mingled that there was no possibility of learning the history of any particular bag. Otherwise useful information might have been obtained as to the length of time these parasites are able to exist without food and under varying conditions.

CECIL WARBURTON.

School of Agriculture,
Cambridge.

THE WOBURN EXPERIMENTAL STATION OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

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FIELD EXPERIMENTS, 1920.

The season 1919–20 was, on the whole, a distinctly unfavourable one. It was marked by the large number of rainy days that occurred and by a succession of cold damp spells at the critical times of crop-growing. The total rainfall for the year was 25·12 ins. with 224 rainy days as against 27·53 ins. with 197 rainy days in the previous year. The winter was a mild one, there being but little frost. A good start was given to the autumn-sown crops, and the work was well forward before Christmas. December, 1919, was very wet, 4·06 ins. falling, and there being 26 rainy days out of the 31. The temperature, however, was generally above that of November, and there was no frost or snow to speak of. February was dry and mild, though the nights were cold. The rainfall was only ·54 in., and there were but 9 rainy days. There was a warm spell at the end of March, the thermometer frequently reaching, in the shade, 60° F. and over. April was wet, with cold winds, and these caused the wheat to turn yellow and delayed the sowing of barley. Drought at the end of May and beginning of June checked the growth, while in June there were cold nights with thunderstorms at the close of the month. These latter delayed hay-making considerably. July was a very wet month, there being 25 rainy days and a rainfall of 3·55 in. This caused much corn to "lodge." The result was that the corn crops ripened very badly, the barley being especially uneven. Sunshine towards the end of August enabled the corn crops to be got in. The general result of the season, as regards the corn crops, was that there was plenty of straw, but that the corn threshed out was very much less than the appearances in the field indicated. Moreover, the grain was of very inferior quality.

As regards the hay crop, that which was ready early was got in well, but the later crop was considerably spoiled. Early sown mangels seemed, at first, to have failed, but they came up later and gave a fair crop. The first sowing of swedes failed, but the second did well and a more than usually good crop for the land was obtained. The season, however, was unfavourable for potatoes and these were considerably attacked by disease.

CONTINUOUS GROWING OF WHEAT (*STACKYARD FIELD*), 1920 (44TH SEASON).

The chief operations were as follows :—

1919, Sept. 26. Farmyard manure given to plot 11 b. The manure contained ·572 per cent. of nitrogen ; the quantity applied per acre, in order to give 100 lb. of ammonia, was 6 tons 8 cwt. 2 qrs. 17 lb.
„ Sept. 30–Oct. 3. Land ploughed.
„ Oct. 22. Mineral manures applied (plots 4, 5, 6, 8, 9, 10a, 11a). Rape dust applied to plot 10b (4·61 per cent. nitrogen), the quantity given per acre being 447 lb. in order to supply 25 lb. of ammonia.
„ Nov. 5. "Little Joss" wheat drilled, at 10 pecks per acre.
1920, May 13. First top-dressings of sulphate of ammonia and nitrate of soda put on.
„ June 1. Second top-dressings given.
„ Aug. 18. Wheat cut.
„ Sept. 2. Wheat threshed.
„ Oct. 1. Corn dressed and weighed.

The only change made this season in the experiments was that rape dust was put on at the time of sowing the wheat instead of in spring. This was thought desirable in order to allow longer for the rape dust to work.

The wheat came up well, though, as usual, plots 2a, 8a and 8b were nearly bare. In April, 1920, the wheat was looking yellow on account of the wet and cold winds. It improved somewhat in May, but never thoroughly recovered. Plots 8aa and 8bb showed the effects of the lime which had been applied again in January, 1918, but it was clear that 10 cwt. per acre was an insufficient dressing. Plot 5b, to which 1 ton of lime had been given in 1905, appeared to be similarly falling off. Of the two plots 2b and 2bb, the latter looked the better. The farmyard manure plot, 11b, was, throughout the season, by far the best plot. Plot 10b (rape dust), however, was but little behind it, and, towards the end of the season, looked, if anything, the better of the two. The nitrate of soda plots were all very weedy, but there was no actual failure of crop, even when nitrate of soda was used alone.

The harvest results are given in Table I, page 258.

The wheat crop threshed out less than it looked in the field. The unmanured plots gave, on the average, 8·5 bushels of corn and 7 cwt. of straw per acre. This was 1 bushel of corn more than in 1919, but the crop, generally, was the lowest since 1916.

The highest yield of corn was 19·5 bushels per acre, this being obtained equally by superphosphate with nitrate of soda, and by superphosphate with sulphate of ammonia, together with lime.

Mineral manures showed a small increase of 1·4 bushels of corn per acre.

Coming to the plots treated with sulphate of ammonia—5a, to which no lime has as yet been applied, continues to hold out wonderfully well, and, no doubt, the minerals applied to it yearly have, in a measure, taken the place of the lime, inasmuch as when the minerals have been omitted and sulphate of ammonia alone been used (plot 2a) the crop has for some years entirely failed. The heavier application of sulphate of ammonia, also without lime (plot 8a), has markedly reduced the crop, viz., from 16·7 bushels to 6·8 bushels, though when lime was given to this plot the produce rose to 18·4 bushels (plot 8aa). Where sulphate of ammonia was used without minerals, the limed plot 2b continued to keep on quite fairly, although no lime had been applied since 1897. 2bb was not as good as 2b, although it had been so the previous year. Lastly, the produce of 2aa would indicate that the dressing of lime had been insufficient.

Nitrate of soda, when used by itself, continued to yield fair crops. The heavier dressing (plot 3a) gave less than a bushel more than the single dressing (plot 3b). The advantage of using mineral manures alone with the nitrate of soda was shown in the comparison of plots 3b and 6; the minerals producing 3·1 bushels more corn per acre. This single dressing of nitrate of soda—say, 1¼ cwts. per acre—gave a better return than did the double dressing (plot 9a), also with minerals.

The comparison of plots 10a and 11a showed, as was the case last year, that there was nothing to choose between the use of phosphate or of potash, or the omission of one or the other.

Rape dust (plot 10b) gave, it will be seen, quite as good a return as did the farmyard manure. This had not been the case in 1919 when the rape dust was sown much later. In other seasons the results have been very variable, and it would certainly appear now that the earlier sowing is an advantage.

Farmyard manure gave practically the same amount of corn as did the rape dust, but 4 cwts. per acre more straw.

The corn was valued as usual, but, owing to the uncertainties of the market, it was very difficult to know what price to put upon the samples. Taking last year's basis of 76*s.* 6*d.* per quarter, the best sample (from plot 5b, sulphate of ammonia with minerals and lime) was put at 75*s.* per quarter. The next best were plots 2a and 5a, on both of which sulphate of ammonia had been used; and the rest were all much alike and not valued above 72*s.* 6*d.* per quarter. The wheats were not up to the average of the district. Some of the corn was in bad condition and contained a good deal of immature grain.

CONTINUOUS GROWING OF BARLEY (*STACKYARD FIELD*).

1920 (44TH SEASON).

The chief operations were as follows:—

1919, Nov. 26–Dec. 4—Land ploughed.

1920, Mar. 8—Farmyard manure applied to plot 11b. The manure contained ·512 per cent. of nitrogen; 7 tons 3 cwt. 3 qrs. 3 lb. per acre were required to supply the necessary 100 lb. of ammonia.

„ Mar. 17–20—Second ploughing of land.

„ April 6—Mineral manures applied, and also rape dust to plot 10b. The rape dust contained nitrogen 5·65 per cent., 364½ lb. per acre being required to supply the 25 lb. of ammonia.

„ April 7—"Plumage" barley was drilled at the rate of 10 pecks per acre.

„ May 15—First top-dressings of sulphate of ammonia and nitrate of soda applied.

1920, June 1—Second top-dressings applied.
" Sept. 9—Barley cut.
" Sept. 29—Barley carted and stacked.
" Nov. 29—Barley threshed.
" Dec. 2—Corn dressed and weighed.

There was no alteration of the plan of experiment this season. It was soon evident that plot 2aa needed liming again Plot 3a (nitrate of soda alone, double-dressing) was considerably better than 3b (single-dressing), but both were small crops, and there was a great deal of spurry on the land. The crop was less than where no nitrogen, but minerals only, had been applied, and plot 6, where mineral manures had been put on with nitrate of soda, was far better. From this consideration, and from indications previously given, it would certainly appear as if the plots 3a and 3b, on which nitrate of soda alone had been applied, were beginning to show failure, just as 2a (sulphate of ammonia alone) had previously done. It has accordingly been decided to divide the plots 3a and 3b, and to apply lime to one half of each. The farmyard manure plot (11b) looked, throughout the season, far the best, and rape dust (10b) was not nearly equal to it, thus showing a marked contrast to what had been noted in the case of the wheat crop.

The harvest results are given in Table II, page 259.

The season was all against the proper ripening of barley, and the crop was a smaller one than any since 1915.

The average of the unmanured plots was 7·5 bushels of corn with 6 cwt. 1 qr. 14 lb. of straw per acre. The highest yield, viz., 33·4 bushels of corn and 26 cwts. of straw per acre, was obtained with farmyard manure. This produce, however, was greatly in excess of that of any of the other plots.

Mineral manures alone, and with lime (plots 4a and 4b) showed an unaccountable difference, the addition of lime this time giving the lower yield; for this there is no adequate reason, and it is contrary to the results of previous years.

In the sulphate of ammonia plots, 2aa clearly showed the need of more lime. The more heavily limed plots still showed a fair produce. It would appear that barley, on such land as this, needs more frequent applications of lime than does wheat.

Nitrate of soda, as already observed, seems to show some failing. The single dressing (1¼ cwt. per acre) produced only 6·3 bushels of corn per acre as against 7·5 bushels on the unmanured plot. The effect of using minerals with the nitrate of soda is seen in the comparison of plots 3b and 6, the yields being 3·6 and 17 bushels per acre respectively. The heavier dressing of nitrate of soda (2½ cwt. per acre) gave an addition of nearly 3 bushels of corn per acre.

TABLE I.—*Continuous Growing of Wheat*, 1920 (*44th Season*).

(Wheat grown year after year on the same land, the manures being applied every year.)

Stackyard Field—Produce per acre

Plot	Manures per acre	Head Corn		Tail corn	Straw, chaff, &c.		
		No. of bush.	Weight per bushel	Weight			
			Lb.	Lb.	C.	q.	lb.
1	Unmanured	9·8	57·5	6	8	2	15
2a	Sulphate of ammonia (=25 lb. ammonia)	1·6	60·0	4	2	1	4
2aa	As 2a, with 5 cwt. lime, Jan., 1905, repeated 1909, 1910 and 1911	6·8	60	12	6	3	20
2b	As 2a, with 2 tons lime, Dec., 1897	12·3	60	29	9	3	12
2bb	As 2b, with 2 tons lime (repeated), Jan., 1905	9·0	58	26	9	0	12
3a	Nitrate of soda (=50 lb. ammonia)	17·2	53·9	22	19	1	0
3b	Nitrate of soda (=25 lb. ammonia)	16·3	54·1	22	17	1	6
4	Mineral manures (superphosphate, 3 cwt.; sulphate of potash, ½ cwt.)	9·9	57·1	8	9	2	16
5a	Mineral manures and sulphate of ammonia (=25 lb. ammonia)	16·7	57·4	12	12	0	0
5b	As 5a, with 1 ton lime, Jan., 1905	19·5	57·6	22	13	1	26
6	Mineral manures and nitrate of soda (=25 lb. ammonia)	19·4	56·3	16	16	2	16
7	Unmanured	7·1	58·5	12	5	2	3
8a	Mineral manures and (in alternate years) sulphate of ammonia (=50 lb. ammonia)	6·8	62·0	20	6	2	0
8aa	As 8a, with 10 cwt. lime, Jan., 1905, repeated Jan., 1918	18·4	56·5	20	11	0	4
8b	Mineral manures, sulphate of ammonia (=50 lb. ammonia) omitted (in alternate years)	3·0	58·0	12	3	0	24
8bb	As 8b, with 10 cwt. lime, Jan., 1905, repeated Jan., 1918	18·7	56·0	20	13	2	20
9a	Mineral manures and (in alternate years) nitrate of soda (=50 lb. ammonia)	13·7	55·0	52	15	3	0
9b	Mineral manures, nitrate of soda (=50 lb. ammonia) omitted (in alternate years)	8·9	56·0	26	5	1	4
10a	Superphosphate 3 cwt., nitrate of soda (=25 lb. ammonia)	17·1	55·8	40	16	2	22
10b	Rape dust (=25 lb. ammonia)	16·6	57·8	11	14	0	24
11a	Sulphate of potash 1 cwt., nitrate of soda (=25 lb. ammonia)	17·2	57·1	24	15	2	14
11b	Farmyard manure (=100 lb. ammonia)	16·4	56·7	50	18	0	10

TABLE II.—*Continuous Growing of Barley*, 1920 (*44th Season*).

(Barley grown year after year on the same land, the manures being applied every year.

Stackyard Field—Produce per acre.

Plot	Manures per acre	Head corn		Tail corn	Straw, chaff, &c.		
		No. of bush.	Weight per bush.	Weight			
			Lb.	Lb.	C.	q.	lb.
1	Unmanured	7·7	51	36	7	0	2
2a	Sulphate of ammonia (=25 lb. ammonia)	3·1	51	4	1	2	16
2aa	As 2a, with 5 cwt. lime, Mar., 1905, repeated 1909, 1910, and 1912 .	4·0	52	20	5	0	8
2b	As 2a, with 2 tons lime, Dec., 1897, repeated 1912	4·5	51	12	2	2	24
2bb	As 2a, with 2 tons lime, Dec., 1897, repeated Mar., 1905 . . .	9·0	52	32	9	0	8
3a	Nitrate of soda (=50 lb. ammonia)	10·8	49·8	50	9	0	10
3b	Nitrate of soda (=25 lb. ammonia)	6 3	51	30	6	0	14
4a	Mineral manures[1]. . . .	15·7	49·3	74	10	1	14
4b	As 4a, with 1 ton lime, 1915 .	9·7	49·3	48	7	0	14
5a	Mineral manures and sulphate of ammonia (=25 lb. ammonia) . .	4·6	50	18	4	3	0
5aa	As 5a, with 1 ton lime, Mar., 1915, repeated 1916	15·3	50	80	12	1	17
5b	As 5a, with 2 tons lime, Dec., 1897, repeated 1912	16·1	50·3	78	10	1	6
6	Mineral manures and nitrate of soda (=25 lb. ammonia) . . .	17·0	48·8	59	12	3	4
7	Unmanured	7·2	49·1	38	5	2	25
8a	Mineral manures and (in alternate years) sulphate of ammonia (=50 lb. ammonia) . . .	1·4	50	2	1	3	12
8aa	As 8a, with 2 tons lime, Dec., 1897, repeated 1912	16·9	50·5	92	12	0	12
8b	Mineral manures, sulphate of ammonia (=50 lb. ammonia) omitted (in alternate years) . . .	1·0	50	2	1	0	8
8bb	As 8b, with 2 tons lime, Dec., 1897, repeated 1912	10·1	50	32	5	3	24
9a	Mineral manures and (in alternate years) nitrate of soda (=50 lb. ammonia)	19·8	49 3	68	14	0	16
9b	Mineral manures, nitrate of soda (=50 lb. ammonia) omitted (in alternate years). . . .	14·2	49	66	11	1	2
10a	Superphosphate 3 cwt., nitrate of soda (=25 lb. ammonia) . . .	18·1	49·4	52	13	2	8
10b	Rape dust (=25 lb. ammonia) .	12·2	50·5	72	11	1	16
11a	Sulphate of potash 1 cwt., nitrate of soda (=25 lb. ammonia) . .	25·2	49	76	17	2	6
11b	Farmyard manure (=100 lb. ammonia)	33·4	50·5	106	25	3	24

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[1] Superphosphate 3 cwt., sulphate of potash, ½ cwt.

The comparison of plots 10a and 11a shows a decided advantage from the inclusion of potash as against that of phosphate, 7 bushels of corn per acre more being obtained through using sulphate of potash. A similar result was obtained in 1919 (an addition of 8 bushels per acre), and, indeed, this has been so to a more or less extent each year since 1915. Accordingly, there would seem to be a steady increase, and one pointing to the need of potash for barley on this land. This, as previously mentioned, has not as yet been shown in the case of the wheat crop.

Rape dust, though put on earlier this season, viz., at the time of sowing, did not effect the same improvement as was shown with wheat, the crop being but a small one, whereas farmyard manure gave much the largest crop of all. This again, as with potash and phosphate, would seem to indicate some clear difference in the nature of the two crops, wheat and barley, in regard to their respective powers of utilising different manurial substances applied.

The barley was valued as usual, but none of it was at all fit for malting. There was a great deal of unripe, badly weathered corn, and none of the samples would have fetched above 60*s*. per quarter.

ROTATION EXPERIMENTS—THE UNEXHAUSTED MANURIAL VALUE OF CAKE AND CORN (*STACKYARD FIELD*).

Series C. 1920, *Red Clover after Barley*.

Red Clover had been drilled on May 26, 1919 in the barley crop of that year. The clover grew well and was cut for hay on June 17, 1920, the crop being carted on June 24–25. A good second crop was also obtained, which was cut on August 24, and carted September 6–7. The respective weights of hay are given in Table III.

TABLE III.—*Rotation Experiment—the Unexhausted Manurial Value of Cake and Corn, Series C* (*STACKYARD FIELD*). 1920, *Red Clover* (*hay*).

Plot		1st crop				2nd crop				Total			
		T	c.	q	lb	T	c	q.	lb.	T	c.	q,	lb
1	Corn-fed plot .	1	14	0	10	1	2	2	21	2	16	2	21
2	Cake-fed plot .	1	15	0	25	1	1	1	14	2	16	2	11

There was, accordingly, nothing to choose between these two plots, any more than had been the case with the preceding barley of 1919. The last manuring of these plots was early in 1919 when the root crop of 1918 was fed on the land with corn and cake respectively. Hence, so far, there has been nothing in the first two crops, subsequent to the manuring, to put to the credit of the richer cake application.

Series D. 1920, *Wheat, after Red Clover.*

The red clover hay crop of 1919 following the barley of 1918 was much the same on the two plots. The land was ploughed early in October, and wheat ("Little Joss") was drilled on October 31 at the rate of 10 pecks per acre. The wheat came up well. It turned somewhat yellow during the wet and cold winds of April, 1920, but did not suffer as much as did the continuous wheat, and, subsequently, it entirely recovered. The wheat looked well throughout the rest of the season and gave promise of a really good crop for the light land of Woburn. On the occasion of the annual visit of inspection by the Council of the R.A.S.E., some went so far as to estimate the yield at 40 bushels per acre. Others, less sanguine, considered 4 quarters (32 bushels) quite likely. The results at threshing showed, however, the disappointing nature of the season, the crop not yielding much more than 3 quarters per acre. This was the general experience in 1920 regarding the corn yield, the unfavourable season for ripening preventing the proper development of the grain and causing a low yield of corn. The wheat was cut on August 17, and threshed direct in the field on September 1 without stacking. The corn was dressed and weighed on September 29. The results are given in Table IV.

TABLE IV.—*Rotation Experiment—the Unexhausted Manurial Value of Cake and Corn. Series D* (STACKYARD FIELD), 1920—*Wheat after Red Clover.*

Plot		Head Corn			Tail Corn	Straw, chaff, etc.
		Weight	Bush.	Weight per Bush.	Weight	
		Lb.		Lb.	Lb.	C. qr. lb.
1	Corn-fed Plot .	1,599	26·6	60·3	71	19 3 14
2	Cake-fed Plot .	1,650	27·1	61·0	106	20 1 2

It will be seen that 27·1 bushels was the highest yield, and that in this, the 4th crop after the manuring with cake and corn, there was no material difference in favour of the richer cake manure. The barley crops of 1917–18, moreover, had both been slightly better on the corn plot than on the cake one.

In passing, it may be noticed that the wheat crop, grown in rotation after clover, was 7 bushels per acre better than the highest produce (artificially manured or with farmyard manure) in the continuous wheat-growing series in the same field.

In the valuation of the corn it was stated that these samples were better grown and better matured than those of the continuous wheat series, though somewhat lacking in "strength." Plot 1 (corn-fed) had "broken" smut in it, but plot 2 (cake-fed), though still smutty, had no "broken" smut. On this account it was put at 76*s*. per quarter as against 73*s*. for plot 1.

GREEN-MANURING EXPERIMENTS

(*a*) *STACKYARD FIELD. Series A.*

In 1920 the wheat crop followed the green crops grown in 1919, and which had been fed off by sheep with cotton cake (1½ cwt. per acre). The green crops, it may be repeated, were all exceptionally good, so that an excellent wheat crop might well have been expected to follow them. The facts, however, proved, as will be seen, otherwise

The land was ploughed on September 18–25, 1919, after the sheep-feeding. On November 1 "Little Joss" wheat, at the rate of 10 pecks per acre, was drilled. The wheat came up satisfactorily, but the crops never looked good, and they turned very yellow under the influence of the wet and cold winds of April, 1920.

The wheat was cut on August 17, and threshed in the field without stacking, on September 1. The corn was dressed and weighed on September 29. The harvest results are given in Table V.

TABLE V.—*Green-manuring Experiment* (*STACKYARD FIELD*).
Produce of Wheat per acre, 1920—after Green Crops Series A

Plot	Manuring in 1920	Head Corn			Tail Corn	Straw, chaff, etc		
		Weight	Bush	Weight per Bush.	Weight			
		Lb		Lb	Lb.	C.	q.	lb
1	After Tares fed off	588	9 7	60 8	75	12	0	6
2	After Rape fed off	820	13·5	60 9	58	10	3	19
3	After Mustard fed off	870	14·2	61 2	58	10	2	6

It will be seen that mustard gave the best crop, then rape, and tares decidedly the poorest. This is the same result as had been obtained in 1918, and it confirms the previous experience in Lansome Field. Apart from this, the crops were, however, unaccountably poor. If reference be made to Table IV (page 261), wheat on the same field, but following red clover, gave 26·6 and 27·1 bushels of corn per acre respectively, but now only 10–14 bushels per acre were obtained, though the preceding green crops had been especially good, and though these had been fed off by sheep along with 1½ cwt. of cotton cake per acre. For this some explanation must be sought, and the endeavour will be made to explain the divergence from what would be expected, inasmuch as the more nitrogenous crop, tares, should collect and store up in the soil more nitrogen than the non-leguminous crop, mustard; and, consequently, the corn crop following it should be better. One fact is clearly brought out, viz., that the corn crops on these green-manuring plots are not what they should be. A possible cause may be that the land is in need of further mineral manuring, and, in order to meet this possibility, it is intended to give a dressing of phosphates and potash to the next series of green-manuring crops.

It struck me also that examination of the soil of the green-manure plots and a comparison of these with the soil of Series D (where red clover preceded wheat) might give some information. Accordingly, samples of the soil were taken, and these gave the following results:—

	Mustard Plot	Tares Plot	Red Clover Plot
	Per cent	Per cent.	Per cent.
Water	11·07	12·05	12·54
Organic matter (loss on heat-heating)	5·63	5·92	6·17
Nitrogen	·098	·114	·122
	bushels	bushels	bushels
Wheat 1920, corn per acre .	14·2	9·7	27·1

From this it is seen that the soil of the tares plot has alike more organic matter and more nitrogen than has that of the mustard plot, the red clover soil being still richer in both respects. Further, the tares soil and the red clover soil have more water than the mustard soil. Yet the higher nitrogen in the tares soil has not caused it to produce as much corn as the poorer (in nitrogen) mustard soil, though where the higher nitrogen has been derived from red clover the corn crop is markedly greater. This would point either to some definite differences in the behaviour of the three green crops, or to the fact that, for some reason as yet unknown, the nitrogen stored up by the tares crop does not get to work. Abundant field for future enquiry is here set out.

There was no difference between the three plots (mustard, rape and tares) as regards the corn valuation. In each case there was smutted grain, but this was not "broken." The corn was stated to be well-matured for the season and in good condition. 76*s*. per quarter all round was the price assigned.

(*b*) *Lansome Field.*

In the corresponding experiment in Lansome Field, where the green crops, instead of being fed on the land, are ploughed in green, the land was fallowed and cleaned in 1919, with a view to getting rid of the weeds which had, of late, greatly increased in this field. Barley was sown in 1920, but the crop came up very unevenly and was never satisfactory, so that the results are not here recorded, and the experiments will be restarted in 1921.

THE RELATIVE VALUES OF LIME AND CHALK FOR LIMING PURPOSES (*STACKYARD FIELD*), 1920 *Series B.*

On these plots, where lime and chalk, used in different quantities, are being compared, swedes in 1920 followed the barley crop of 1919. The land was ploughed in October, 1919, and a second time May 22–25, 1920; 3 cwt. of superphosphate and 1 cwt. of sulphate of potash per acre were given and "Darlington Swede" seed was drilled on May 28 at the rate of 8 lb. per acre. This first sowing failed, but swede seed was again drilled on June 21, and this time came up very well, so that quite a fair crop, for the land, was obtained. The roots were pulled on December 8, and the weights are given in Table VI.

TABLE VI. *Lime and Chalk Compared* (*STACKYARD FIELD*), 1920. *Series B.*

Produce of Swedes, after Barley.

Plot	Applications per Acre	Produce of roots per acre			
		T.	cwt.	qrs.	lb
1	Nothing	16	5	2	24
2	Chalk = 10 cwt. lime . .	15	10	0	0
3	„ = 1 ton „ . .	18	5	2	24
4	„ = 2 tons „ .	19	4	1	4
5	„ = 3 tons „ . .	16	8	2	8
6	„ = 4 tons „ .	19	2	3	12
7	Nothing .	18	2	3	12
8	Lime (caustic) 10 cwt .	17	14	1	4
9	„ „ 1 ton . .	20	1	1	20
10	„ „ 2 tons	19	4	1	4
11	„ „ 3 tons	18	12	3	12
12	„ „ 4 tons	18	14	1	4

Nothing very definite can be made out from these results. Moreover, there is not the agreement between the duplicate plots 1 and 7 which one would like to see. On the whole, it would appear that lime has done rather better than chalk, and the best results were obtained from an application of 1 ton and 2 tons per acre respectively of lime. This being only the second year of the experiment it is clear that this experiment will have to be continued for some time before any definite conclusions can be drawn.

GRASS EXPERIMENTS.

1. *Broad Mead*, 1920.

(*a*) Improvement of Old Pasture.

(*b*) Varieties of Lime.

(*c*) Different Forms of Lime.

In the old pasture series, the last application of manures having been in 1913, these were now again given. An alteration was made on Plot 1, 1 cwt. of nitrate of potash per acre being replaced by 3 cwt. of kainit. This and the other applications were made on January 15, 1920, with the exception of the farmyard manure (plot 6), which did not go on until February 16. In experiment (c) (different Forms of lime) the various applications of lime were again given in January 1920, the last previous application having been in 1913.

The plots were all chain-harrowed in February, this being followed by rolling. The grass was cut on June 22–26, and carting began on June 28–30. A good deal of the hay was spoilt by rain, but it was all finally gathered and stacked by July 10. The results are given in Tables VII, VIII, and IX.

TABLE VII. *Improvement of Old Pasture* (*Broad Mead*).

Produce of Hay per acre, 1920.

Plot	Manuring per acre in 1920	Weight of hay per acre			
		T.	c.	q.	lb.
1	Basic slag 10 cwt. Kainit 3 cwt.	1	9	3	0
2	Mineral superphosphate 5 cwt. Sulphate of potash 1 cwt.	1	4	0	0
3	Basic slag 10 cwt. Sulphate of potash 1 cwt.	1	4	2	0
4	No manure	1	2	3	0
5	Lime followed (in 1913 and 1920) by Superphosphate 3 cwt. Sulphate of potash 1 cwt.	1	2	2	0
6	Dung 12 tons	1	14	2	0

TABLE VIII.—*Varieties of Lime on Grass Land* (*Broad Mead*).

Produce of Hay per acre, 1920.

Plot	Lime applied in 1910 and again in 1916 [1]	Weight of hay per per acre			
		T.	c.	q.	lb.
1	Buxton lime	1	2	2	0
2	Chalk lime	1	0	1	0
3	Magnesian lime		19	3	0
4	No lime	1	4	3	0
5	Lias lime	1	4	0	0
6	Oolite lime	1	4	2	0

[1] Two tons per acre in each case.

TABLE IX.—*Different Forms of Lime on Grass Land* (*Broad Mead*).

Weights of Hay per acre, in 1920.

Plot	Lime applied 1913 and again in 1920 [1]	Weight of hay per acre			
		T.	c.	q.	lb.
1	Lump lime	1	9	3	0
2	Ground lime	1	6	1	0
3	Nothing	1	5	2	0
4	Ground limestone	1	14	1	0
5	Ground chalk	1	14	0	0

[1] 20s. per acre (independently of carriage, cartage, &c.), was originally spent on each plot for the lime used.

In (*a*) the results were singularly like those of 1919. The heaviest yield was from plot 6 (farmyard manure), though the hay was of coarser quality than from any other plot. The next best yield, and of much better quality, was the hay from plot 1 (basic slag and kainit). Superphosphate and basic slag with, in each case, sulphate of potash, gave much the same results.

(*b*) The results this year were somewhat different to those of 1919 when the unlimed plot was the poorest of all, and when the application of lime of one kind and another gave in every case some benefit. Now the unlimed plot was as good as any. Magnesian lime was, however, the poorest plot.

(*c*) As in 1919, the unlimed plot gave the lowest return, and decidedly the best plots were those treated with ground limestone or ground chalk. These results were similar to those of 1919.

2. *Charity Farm—West Brook Field*, 1920.

Plot 1 (always hayed) was the only one to be mown in 1920. The plots were chain-harrowed in March and April 1920. The grass of plot 1 was cut July 20–21, and the hay carted on August 3–4. The weight of hay was as follows:—

	Weight of hay per acre. T.	c.	q.	lb.
Plot 1 (always hayed)	1	4	1	16

Rainfall at Woburn Experimental Station, 1919–20.

(292 ft. above sea level.)

	Total Inches	No. of days with ·01 in. or more recorded		Total Inches	No. of days with ·01 in. or more recorded
1919.			March . .	1·95	19
October . .	1·50	17	April . . .	2·98	27
November .	1·50	23	May . . .	2·16	20
December .	4·06	26	June . . .	1·62	13
1920.			July . . .	3·55	25
January . .	1·95	18	August . .	1·29	12
February .	·54	9	September .	2·02	15
			Total . .	25·12	224

POT-CULTURE EXPERIMENTS, 1920.

I. *The Hills' Experiments—(a) The Influence of Compounds of Tin upon Wheat.*

Little seems to be known about the effects of Tin compounds upon vegetation. It was accordingly determined to make trials with these at Woburn. The selected compounds were Stannous and Stannic oxides, chlorides, and sulphates. The soil used was that of Stackyard Field, the pots earthenware ones, and each experiment was in duplicate. The quantities of the compounds used were (in terms of the metal Sn) ·05 per cent and ·10 per cent., except in the case of the chlorides (which, it was thought, might possibly prove more toxic) where the smaller amount of ·025 per cent. was also given. The percentages were, as usual, reckoned on the whole soil after mixing with the various compounds.

On December 11, 1919, wheat was sown, twenty seeds in each pot.

As regards germination, a slightly retarding effect was noticed with Stannous chloride ·05 per cent., and also with Stannic chloride ·10 per cent. Six days later all the plants with the Stannous chloride had come up, but with Stannic chloride only fourteen out of the twenty seeds sown germinated. The sulphates seemed, if anything, to accelerate the growth. The plants were thinned out to twelve in each pot in February, and the growth went on, on the whole, quite satisfactorily. For the next two months there was no difference visible, but towards the end of April these began to show. The oxide seemed, at first, to improve the crop, especially the higher amount of Stannic oxide. Later on, however, this was not noticeable. In the case of the chlorides, while the Stannous chloride seemed to show no injury, the higher quantity of Stannic chloride (·10 per cent.) killed some of the plants and injured others. The sulphates seemed to improve the crop, the improvement increasing with the concentration When nearly ripe, the crops were photographed, and then subsequently harvested and threshed on October 19. The results are given in Table I, page 269.

The general results, which are borne out by the appearances of the crops themselves in Plate I, indicate that the Stannic salts were decidedly more marked than the Stannous in their influence in either stimulating the crop or in producing a toxic effect upon it, and further, that the chlorides had a more marked effect than the oxides. With the oxides, as used in the quantities stated, no marked differences were noticeable until ·10 per cent. was reached, when a slight depression in the crop was obtained. With Stannous chloride there was a gain in all cases, this increasing with the amount and being most marked where up to ·10 per cent. was used (see pot 16, Plate I). A similar gain was found with Stannic chloride in the lower amounts, but, when the quantity reached ·10 per cent. Sn, there was a marked depression, little more than a half crop being obtained. This is clearly brought out by the appearance of pot 23, Plate I. As regards the sulphates, there was no gain from the Stannous sulphate, indeed, in some cases a depression; but with Stannic sulphate there was a gain of crop in each case, this reaching a quite material one where ·10 per cent. Sn was used (see pot 31, Plate I). It would seem, from a consideration of the above, that the respective influences on the crop were determined rather by the acid radical than by the metal itself. Indeed, there is no instance in which the influence on the crop can be directly traced to the presence of the metal, tin, or to any particular amount of it. It was otherwise with regard to the acid radical. In the case of the chlorides, for example, ·10 per cent. Sn, in the form of Stannous chloride, contained no more chlorine than did ·05 per cent. as Stannic chloride, but when the amount of the latter salt was increased to ·10 per cent. Sn, then a toxic point was reached, this, however, being due to the chlorine and not to the

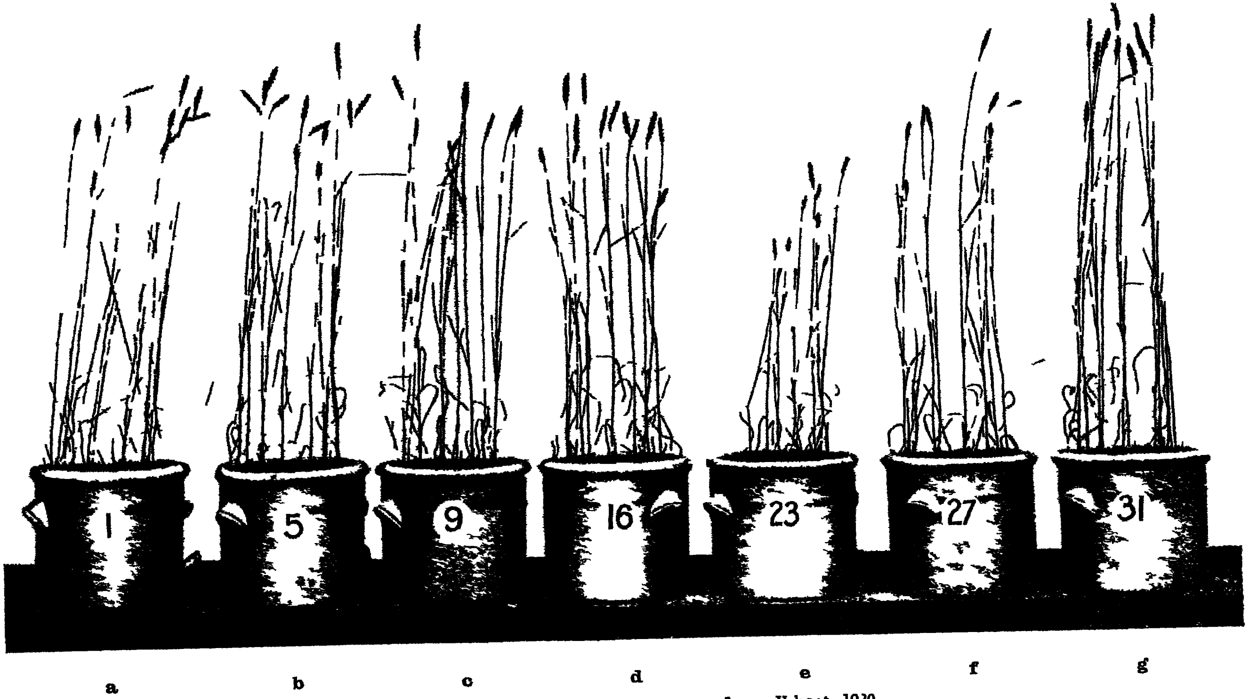

PLATE 1.—The influence of Tin compounds on Wheat, 1920

(a) untreated (b) 10 per cent of Tin as Stannous oxide, (c) 10 per cent as Stannic oxide (d) 10 per cent as Stannous chloride, (e) 10 per cent as Stannic chloride (f) 10 per cent as Stannous sulphate (g) 10 per cent as Stannic sulphate

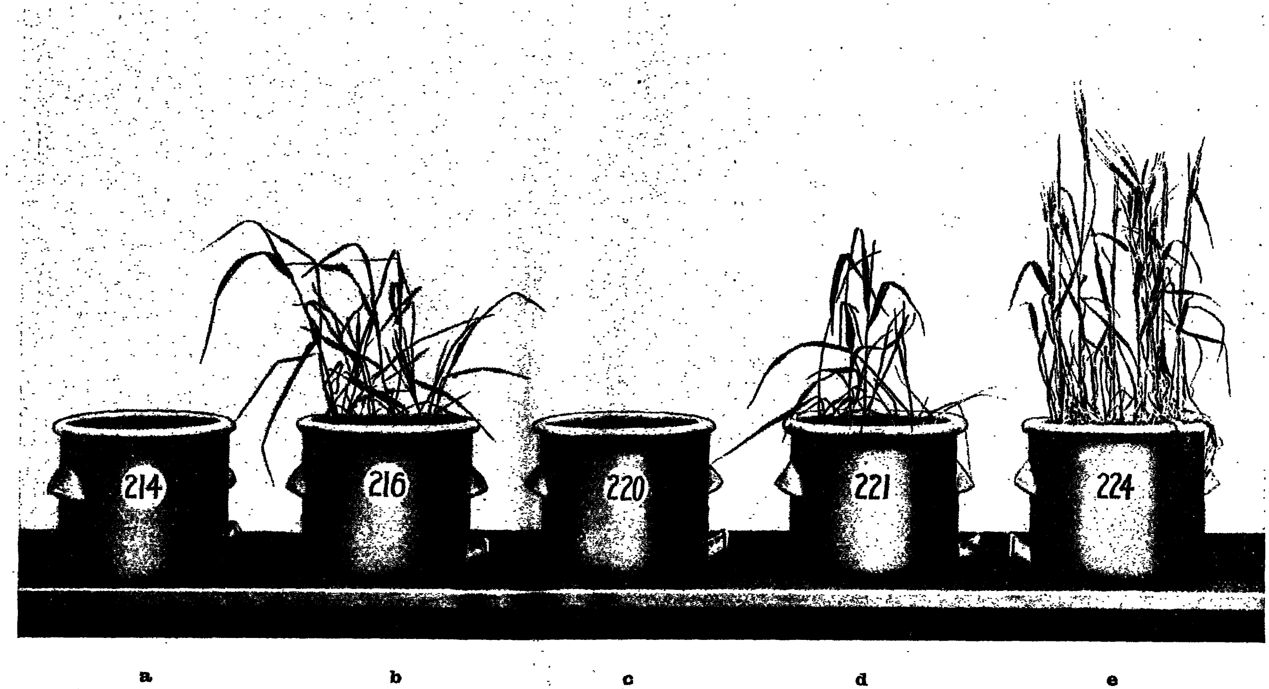

Plate 2.—The influence of Chromate and Bichromate of Potash on Barley, 1920.

(a) ·01 per cent. of Chromium only; (b) ·005 per cent. as Chromate of Potash; (c) ·01 per cent. of Chromium, and (d) ·005 per cent. as Bichromate of Potash; (e) untreated.

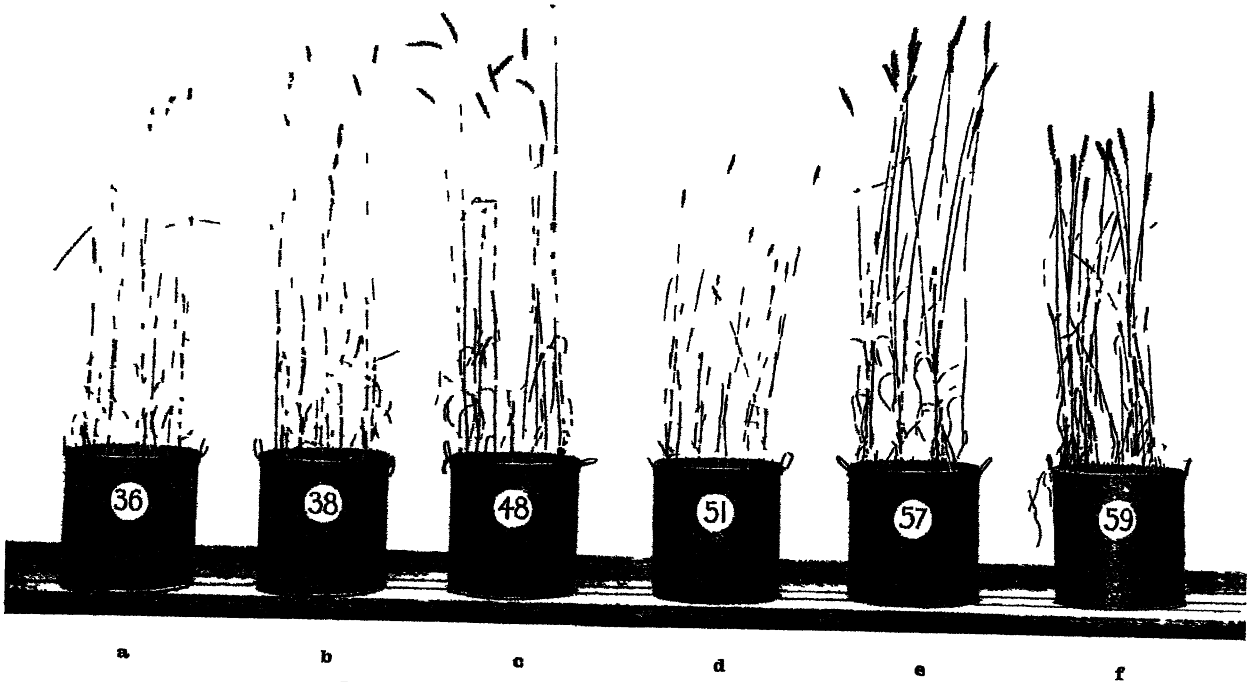

PLATE 3.—The influence of Ferrous sulphate and Lime upon Wheat, 1920.
(a) untreated, (b) 1 per cent of Iron as Ferrous sulphate, (c) Lime alone—one equivalent, (d) 2 per cent of Iron as Ferrous sulphate, (e) the same with 2 equivalents of Lime (f) 2 equivalents of Lime alone

tin. This was not the case with the SO_3 radical, as the increase with this has been good and a toxic point not reached.

The general conclusions may be summed up as follows:—

1. Tin as a metal appears to have no direct action upon vegetation. Where differences are shown, when using various compounds of tin, these differences are due to the acid radical contained and not to the metal.

2. The oxides of tin show no marked influence one way or the other up to ·10 per cent. Sn.

3. The chlorides of tin have a favourable influence up to ·10 per cent. Sn. as Stannous chloride, but with Stannic chloride only up to ·05 per cent. Sn, ·10 per cent. Sn being in this form distinctly toxic.

4. Stannous sulphate has no effect when used up to ·10 per cent. Sn, but Stannic sulphate at this concentration of ·10 per cent. Sn is distinctly beneficial.

TABLE I.—*Compounds of Tin on Wheat*, 1920.

Treatment	Corn	Straw
No treatment	100	100
Stannous oxide ($Sn\,O$) containing ·05 per cent. Sn	105·9	98·9
,, ,, ,, ,, ·10 ,, ,,	109·2	106·3
Stannic oxide ($Sn\,O_2$) ,, ·05 ,, ,,	108·9	101·5
,, ,, ,, ,, ·10 ,, ,,	84·8	96·8
Stannous chloride ($Sn\,Cl_2\,2H_2O$) ,, ·025 ,, ,,	133·9	102·2
,, ,, ,, ,, ·05 ,, ,,	137·0	107·8
,, ,, ,, ,, ·10 ,, ,,	153·6	113·8
Stannic chloride ($Sn\,Cl_4\,5H_2O$) ,, ·025 ,, ,,	131·8	105·1
,, ,, ,, ,, ·05 ,, ,,	142·8	113·0
,, ,, ,, ,, ·10 ,, ,,	56·4	60·6
Stannous sulphate ($Sn\,SO_4$) ,, ·05 ,, ,,	77·0	83·9
,, ,, ,, ,, ·10 ,, ,,	60·7	75·6
Stannic sulphate ($Sn.\,(SO_4)_2$) ,, ·05 ,, ,,	111·0	113·4
,, ,, ,, ,, ·10 ,, ,,	140·6	140·9

(*b*) *The Action of Chromium Salts upon Barley.*

Chromium seems to be a metal the influence of which on vegetation has not so far been studied. And, yet, experiments on this question claim some practical application inasmuch as salts of chromium are used in certain tanning processes (chrome leather), and the effluents from works where these processes are carried on may find their way on to land, sewage farms, &c. It seemed to me, therefore, a fitting subject for study in connection with the work of the Hills' Trust.

The experiments of 1920 were begun late and were of a purely tentative character; barley, because of the lateness of the season, was selected as the crop. The compounds first tried were the chromate and bichromate of potash, these being used, to start with, in amounts to supply ·05 and ·10 per cent. of chromium respectively.

The soil was from Stackyard Field, and the applications were, in the first instance, mixed with the top 10 in. of soil. The first noticeable result was that the barley plants appeared in the untreated pots only. Chromate and bichromate, in the quantities given, effectually killed the seeds and prevented germination.

It was further noticed that the chromium salts worked their way up to the surface of the soil and formed regular incrustations on it. The experiment was then restarted on May 17, barley being again sown, and the quantities of chromate and bichromate were reduced so as to supply ·025, ·01, and ·005 per cent. of chromium respectively. The salts were, in this case, mixed with the whole of the soil in either pot. The plants came up well in the untreated pots, but in none of the others were there more than a few very feeble plants. By June 10, the untreated plants were 6 in. high, but in none of the other pots were they above 2 in. in height. With the chromate ·025 per cent., out of forty seeds sown in the two duplicate pots, none appeared; with ·01 per cent., seven plants; with ·005 per cent. twenty-six plants came. With the bichromate, no plants at all appeared when ·025 per cent. was given; twenty-one plants came with ·01 per cent.; and twenty-three plants with ·005 per cent. These appearances are shown in Plate II. None of the treated plants ever reached more than a height of 4 in., and in no case were ears formed.

It is clear from this experiment that chromium as chromate or bichromate of potash is extremely toxic, so little as ·005 per cent. of chromium in these forms effectually preventing the growth of barley.

It will be necessary to restart this experiment, beginning with still smaller amounts of chromium, and this is comprised in the work for 1921.

II. *The Relative Effects of Lime and Chalk.*

These experiments, begun in 1919, and the counterpart of the liming experiment in Stackyard Field (see page 264), were continued for the second year, the original pots with the same applications being used. Wheat was sown, barley having been the crop of 1919. The soil (from Stackyard Field), contained lime ·233 per cent., magnesia ·122 per cent., and organic matter 3·29 per cent. The experiments were, as before, in duplicate. At the end of 1919 the soil was turned out of each pot then used, well mixed, and returned to its own pot.

Wheat was sown on November 7, 1919. There was nothing to remark in the germination except that, possibly, the higher amounts of chalk exercised a slightly depressing influence. The plants practically all came up, and were subsequently thinned to twelve plants per pot.

Up to the end of April there was nothing to note, then the lime set, as a whole, began to show superiority. There was an increased growth with lime as used up to 3 tons per acre, a gradually increased tillering also showing itself; the 4 tons of lime per acre set looked, however, inferior. The chalk series, while not as good as the lime, showed the same progressive increase up to 3 tons per acre and then a falling-off. The comparative weights are given in Table II. The duplicates were very regular and the experiment went very satisfactorily throughout.

In Table II are also given, for purposes of comparison, the results obtained with the barley crop in 1919.

TABLE II.—*Lime and Chalk upon Wheat*, 1920.

Treatment	1919		1920	
	Barley		Wheat	
	Corn	Straw	Corn	Straw
No Lime	100	100	100	100
Lime (CaO) 10 cwt. per acre	120·6	116·7	117·5	107·1
,, ,, 1 ton ,, ,,	144·3	165·0	124·3	112·7
,, ,, 2 tons ,, ,,	233·0	245·3	131·2	112·7
,, ,, 3 ,, ,, ,,	292·8	292·1	149·9	132·6
,, ,, 4 ,, ,, ,,	299·0	313·8	148·7	125·8
No Lime	100	100	100	100
Chalk=CaO 10 cwt. per acre	98·5	102·9	107·5	96·7
,, ,, 1 ton ,, ,,	113·3	109·6	127·1	111·7
,, ,, 2 tons ,, ,,	113·3	113·9	116·1	105·5
,, ,, 3 ,, ,, ,,	124·1	113·9	106·6	107·5
,, ,, 4 ,, ,, ,,	106·7	111·0	119·1	92·5

The results, as regards the application of lime, followed the line of those of 1919, but the progressive increase was not nearly so marked as then. The 3 tons per acre application, as in 1919, gave the best results, and the 4 tons a slight falling below this. The increases were, however, on the whole, nothing remarkable, nor anything like the striking ones of 1919. It is evident from this that the caustic lime did its work in the first season.

As regards chalk, the remarks made in 1919, that such increases as shown were not beyond the limits of experimental error, again applied; with 4 tons per acre of chalk there was, indeed, some depression.

The roots were also examined; in the lime series the different lots showed an increased fibrous growth, but with the chalk this was not noticeable.

It would certainly seem as if lime had acted more expeditiously, as a neutraliser of the soil and as a crop producer, than did chalk ; also, that 10 cwt. per acre of chalk, or, at least, 1 ton of this per acre, had proved as effective for correction of acidity and crop production as did the higher quantities of it.

At the end of the season the soils were turned out and examined in order to see what was the lime requirement of each after the growing of this second crop. The determinations were made and are set out in Table III, the figures of 1919 (after one crop) being given also by way of comparison.

TABLE III.—*Lime Requirement in Soils after application of Lime and Chalk.*

	1919 (After one crop) $CaCO_3$ required to neutralise	1920 (After two crops) $CaCO_3$ required to neutralise
	Per cent.	Per cent.
Original soil (at commencement) . . .	·095	
No lime added	·095	·045
Lime—10 cwt. per acre	·085	·035
„ 1 ton „ „	·075	·035
„ 2 tons „ „	·065	·025
„ 3 „ „ „	·045	·020
„ 4 „ „ „	·035	·020
Chalk = CaO—10 cwt. per acre	·065	·035
„ „ 1 ton „ „	·035	·032
„ „ 2 tons „ „ .	·035	·030
„ „ 3 „ „ „	·035	·025
„ „ 4 „ „ „	·025	·025

There is a striking drop all through, and this, occurring with the unlimed plots too, is very hard to explain. The results, it may be said, have been verified by repetition. The reduction of acidity in the case of the lime has been more marked than in that of the chalk. The ultimate results, as regards acidity, after two crops have been grown, are much the same whether lime or chalk had been used.

III. *The Effect of Ferrous Oxide on Wheat.*

In previous experiments (1918) conducted at the Pot-culture Station some remarkable results attended the application of ferrous oxide to wheat, these indicating that an acid condition of the soil was set up which was harmful in nature. A question arose out of this—on a suggestion made to me by Dr. Geo. McGowan—whether, if lime were added to neutralise this, the iron salts would still prove harmful or would now be rendered effective. The present experiment was designed with this purpose.

It was decided to use $FeSO_4$ containing ·1 and ·2 per cent. Fe reckoned on the whole soil with which it was mixed, and to add lime (as CaO) in different quantities so as to half neutralise, fully neutralise, and over neutralise the acidity. Simultaneously, for comparison, the effect of lime alone, in these different quantities, was tried.

The soil was from Stackyard Field (analysis, see page 270) ; iron was applied as $FeSO_4\ 7H_2\ O$ so as to form, with the lime, Ferrous hydroxide in the soil.

Wheat was sown December 23, 1919. In the germination there was a marked retarding effect shown where Fe ·2 per cent. was used alone, though, eventually, nearly all the plants came. These were thinned out, as usual, to twelve plants per pot. The harmful effect of the higher quantity of Fe continued to be marked, and by the end of March the plants seemed to be dying, though later on they recovered somewhat. This set clearly showed a toxic effect from the higher amount of Fe, but it was the only one in the whole series that markedly exhibited this. This is brought out by the appearances of the crop as given in Plate III. The harvest results are given in Table IV.

TABLE IV.—*Ferrous Oxide on Wheat*, 1920.

Treatment	Corn	Straw
Untreated	100	100
Fe SO_4 containing ·1 per cent. Fe	137·5	111·9
Fe SO_4 „ ·1 per cent. Fe, with half equivalent of Lime	135·7	116·1
„ „ 1 per cent. Fe, with full equivalent of Lime	115·6	95·5
„ „ 1 per cent. Fe, with double equivalent of Lime	164·3	125·1
CaO alone, half equivalent (Fe ·1 per cent.)	118·7	99·1
„ „ full „ „	162 0	125·3
„ „ double „ „	227·8	170·7
Fe SO_4 containing ·2 per cent. Fe	37·0	52·5
„ „ ·2 per cent. Fe, with half equivalent of Lime	137·7	115·2
„ „ ·2 per cent. Fe, with full equivalent of Lime	68·1	75·1
„ „ ·2 per cent. Fe, with double equivalent of Lime	215·8	156·0
CaO alone, double equivalent of Lime	170·2	173·3

As regards the application of the lower amount of Fe, it will be seen that this, when used alone, gave a certain amount of increase, one exceeded, however, by the double equivalent of lime. On the other hand, there was a strange and unexplainable reduction when the full equivalent of lime was used. This was not confined to one pot, but the duplicates agreed closely, and the same anomaly was found when the larger amount of Fe was used.

The effect of applying lime alone, however, showed that better results are obtained from lime by itself than from the same amount of lime used with ·1 per cent. Fe. With the double amount of Fe there was a great falling off, as the photograph shows, but this was remedied by lime, more especially when used in the higher amounts. The better tillering of the lime sets is also indicated in the photograph.

This experiment presents several anomalies which it will be well to verify by continuing it for another year, and this is being done.

Meantime, one cannot say much more than that ferrous oxide containing ·1 per cent. Fe, has not shown itself to be harmful, but in amount containing ·2 per cent. Fe, it is distinctly so; and that lime, generally speaking, will remedy the injury done, though without showing any marked benefit to result from the use of the ferrous oxide.

IV. *The Influence of Silicates on Wheat.*

In consequence of some results obtained in 1916 which seemed to indicate that magnesium silicate benefited wheat, it was resolved to carry out further investigations on the subject. The selected materials were calcium silicate, magnesium silicate, and aluminium silicate. There was an objection to using potassium and sodium silicates because of the excessive alkalinity of these and the impossibility of neutralising them while still retaining the silica. There being also difficulty in getting aluminium silicate free from ammonia, the natural material, Kaolin, was used, the calcium and magnesium silicates employed being the chemically prepared bodies.

The soil was from Stackyard Field (analysis, see page 270), and the several applications were made at the rates of 1 ton, 2 tons and 4 tons per acre, the materials being mixed with the whole of the soil.

Wheat was sown on December 17. There was nothing noticeable in regard to germination, and all the plants grew well. During the growth of the crops the only point to note was that the calcium silicate series took a lead of the others, and that magnesium silicate developed, with the heavier dressings, the same deep green appearance which had previously been noticed.

The pots were photographed on August 6, the crop harvested on August 9 and threshed. The comparative weights are given in Table V.

TABLE V.—*Silicates upon Wheat*, 1920.

Treatment	Corn	Straw
Untreated	100	100
Calcium Silicate, 1 ton per acre	113·4	104·1
" " 2 tons " "	124·4	116·8
" " 4 " " "	150·1	139·0
Magnesium Silicate, 1 ton per acre	111·9	115·1
" " 2 tons " "	109·5	124·5
" " 4 " " "	113·5	135·4
Kaolin, 1 ton " "	83·8	104·3
" 2 tons " "	96·5	100·3
" 4 " " "	103·0	96·8

The roots, on being examined, showed no particular differences.

The general results obtained indicated a decided improvement in the case of calcium silicate when used in the higher amount (4 tons per acre), the increase reaching 50 per cent. With the 2 tons per acre of calcium silicate the gain was much less marked (24 per cent. only). In no other case throughout the series was there any increase more than would be accounted for by experimental error. From this it might well be concluded that the presence of lime in a soil, in forms other than the carbonate, has to be taken into account when considering the lime needs thereof; and it would seem more than likely that lime, even when converted into the more insoluble condition of calcium silicate, yet exercises a beneficial influence. In the opinion of some, it is only the lime occurring as carbonate that counts; this view I, myself, have never held, but believe that the total lime, be it present as oxide, nitrate, carbonate, sulphate, or even as silicate, is the deciding factor when considering whether a soil needs lime or not.

The foregoing would appear to strengthen this latter view.

The general conclusions from this work are:—

1. That calcium silicate, used in quantity up to 4 tons per acre, produces a decidedly beneficial effect upon the wheat crop.

2. That magnesium silicate is without influence.

3. That kaolin (aluminium silicate) is also without effect.

V.—*The Relative Effects of Chemically Prepared and Natural Forms of Magnesium Carbonate*

In previous experiments with magnesia and magnesium carbonate it had been the practice to employ the chemically prepared substances, as these were obtainable in a pure form. A suggestion, however, arose whether the same results would have been obtained had the natural substances instead of the chemically prepared ones been used. It was, accordingly, determined to try this question, and, in 1920, experiments were conducted on wheat, employing magnesium carbonate in the naturally occurring forms of magnesite and dolomite, as well as in the chemically prepared form.

It was further decided to carry the experiment out on both winter-sown and spring-sown wheat, in order to see whether any differences were shown between the two sets.

The soil was from Stackyard Field and contained ·23 per cent. of CaO, and ·13 per cent. of MgO. The chemically prepared magnesium carbonate contained 46·16 per cent. of MgO, the magnesite 46·56 per cent. MgO, and the dolomite 20·88 per cent. MgO with 30·14 per cent. CaO. Each material was used at rates which represented, respectively, 1 ton, 2 tons, 4 tons and 6 tons of magnesium carbonate per acre.

The winter-sown wheat was put in on December 23–24, 1919, and the spring-sown on March 17–18, 1920.

Owing to the wheat plants being, in several cases, badly attacked by a fungus, and owing to other irregularities which occurred, the quantitative results cannot be taken as more than approximately correct; they are, therefore, not put out in detail here, but the experiment will be repeated another year. It will be sufficient to indicate the general conclusions so far as these were obtained.

As regards germination, there were no differences to record. Taken as a whole, the effect of the addition of magnesium was generally to produce a deep green colour of stem and leaf. At first it seemed as if the heavier dressings (4 tons and 6 tons per acre) were exercising a toxic effect not noticeable with the smaller amounts, but these passed off as the plants grew older. The striking feature was that the winter-sown crop was very different to the spring-sown one, for, while in the former the addition of magnesium carbonate showed an increase of crop with all three forms of magnesium carbonate, in the spring-sown wheat these increases were entirely absent, none of the applications effecting any improved yield either of corn or straw. It may, accordingly, be concluded that with the spring-sown wheat there was not a sufficiently long period of growth for the influence of the magnesium carbonate to "tell." With the winter-sown wheat, however, the chemically prepared magnesium carbonate gave increased yield in each case, this increasing with the application; with the dolomite (which, it must be remembered, contained a large amount of lime also) there was uniform increase, though not to so large an extent as with the chemically prepared substance; while magnesite, though it similarly gave an increase in all cases, did not do so to as marked an extent as did the other two forms.

For the reasons above given, the quantitative results are not set out, and the experiment will be repeated later. It is quite possible, indeed, that the superior working of the chemically prepared magnesium carbonate was due to its finer state of division (through being precipitated), as compared with the natural minerals merely in the ground state.

VI.—*The Influence of Sulphur on Crops.*

A good deal having been communicated to us, chiefly from America, as to the wonderful effects of sulphur as an application for crops such as Lucerne, it was decided to carry out in 1920 some experiments with this substance.

The crops selected were (*a*) Mustard, (*b*) Red Clover, (*c*) Lucerne. Sulphur was used in the form of flowers of sulphur, and was mixed with the entire soil in each pot. It was given in the quantities of 1 cwt. and 2 cwts. per acre respectively on April 19, 1919; it was then left for a time in order to enable any action that might ensue from the mixing to do so before the seed was sown. Sowing took place on May 18. In addition to the above, there were extra pots sown with Lucerne and to which lime alone, or sulphur mixed with lime, was given, the lime being at the rate of 2 tons per acre.

The germination did not, in any case, show points of interest. The first crops were duly cut green when flowering was general and a second crop thereafter grown. The dry matter was estimated in each crop and the results are set out in terms of this.

With the Mustard there was a small increase in the first crop, as more sulphur was used; but in the second crop the tendency was in the opposite direction, and when the totals of the two crops were taken there was nothing in favour of the use of sulphur.

In the case of the Red Clover, no beneficial influence was seen in either the first or second crop; the differences were not outside the range of experimental error.

With Lucerne, when sulphur was used alone, there was absolutely no difference in either the first or second crop, and the sulphur was clearly without effect. By using lime (2 tons per acre) on the Lucerne, however, the result obtained was a one-third larger crop, the addition of sulphur to the lime making but slight difference.

It may, therefore, be fairly concluded that with these crops, Mustard, Red Clover, and Lucerne, the sulphur failed to show any of the great benefits which had been claimed for it.

The results, stated in terms of the dry matter, are set out in Table VI.

TABLE VI.—*Sulphur on Mustard, Red Clover, and Lucerne,* 1920.

Crop	Treatment	Dry Matter		
		1st Crop	2nd Crop	Total Crop
		grammes	grammes	grammes
Mustard	No Treatment	33·54	9·40	42·94
	Sulphur 1 cwt. per acre . . .	37·62	10·13	47·75
	,, 2 ,, ,, ,, ...	38·58	6·98	45·56
Red Clover	No Treatment	37·16	30·96	68·12
	Sulphur 1 cwt. per acre . . .	31·69	32·51	64·20
	,, 2 ,, ,, ,, . . .	36·11	25·84	61·95
Lucerne	No Treatment	19·26	11·85	31·11
	Sulphur 1 cwt per acre	19·34	10·73	30·07
	,, 2 ,, ,, ,, . . .	19·24	11·02	30·26
	Lime 2 tons ,, ,, . . .	22·76	18·56	41·32
	Lime 2 ,, Sulphur 2 cwts } per acre .	23·98	18·70	42·68

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DISTRIBUTION OF GOVERNORS AND MEMBERS OF THE SOCIETY, AND OF ORDINARY MEMBERS OF THE COUNCIL.

Electoral District	Division	Number of Governors and Members	Number of Ordinary Members of Council	Ordinary Members of Council
A.	Bedfordshire . . .	82	1	J. H. Howard.
	Cheshire	526	3	Hon. J. E. Cross; Capt. W. H. France-Hayhurst, G. Norris Midwood.
	Cornwall	119	1	Brooking Trant.
	Derbyshire	208	1	J. T. C. Eadie
	Dorset	102	1	A. Hiscock
	Hampshire and Channel Islands . .	370	2	J. Falconer, Capt. Percy Seward
	Hertfordshire . .	220	1	Richardson Carr.
	Lancashire and Isle of Man	497	3	W. Fitzherbert-Brockholes, W. Harrison; T. B. Silcock
	Middlesex . . .	114	1	A. W. Perkin
	Monmouthshire . .	109	1	Col. Edward Curre
	Norfolk	478	2	Davis Brown, Henry Overman.
	Northamptonshire . .	213	1	F. H. Thornton
	Northumberland . .	323	2	G. G. Rea; A. H. Ridley
	Staffordshire . . .	317	2	John Myatt; R. G. Patterson.
	Worcestershire . . .	210	1	Col. E. V. V. Wheeler.
	Yorkshire, N.R. . .	303	2	Major Clive Behrens, C. W. Walker-Tisdale.
	Scotland	250	1	A. M. Montgomery.
		—4,441	—26	
B.	Buckinghamshire . .	163	1	G. H. Harris.
	Devon	197	1	Andrew Rogers.
	Durham	283	1	C. Middleton.
	Essex	237	1	Sir Walter Gilbey.
	Herefordshire . . .	164	1	A. P. Turner.
	Leicestershire . . .	166	1	Sir A. G. Hazlerigg.
	London	586	3	W. W. Chapman; Sir Howard Frank, F. Hamlyn Price.
	Nottinghamshire . .	194	1	C. M. S. Pilkington.
	Rutland	26	1	
	Shropshire	428	2	Lord Harlech; Alfred Mansell.
	Suffolk	258	1	Fred Smith.
	Surrey	244	1	Major Dunbar Kelly.
	Wiltshire	220	1	D. Combes, junr.
	Yorkshire, W.R. . .	392	2	Major G. R. Lane-Fox; C. Howard Taylor.
	South Wales. . . .	169	1	Col. C. Venables Llewelyn.
		—3,727	—19	
C.	Berkshire.	194	1	Sir W. A. Mount.
	Cambridgeshire . . .	222	1	J. L. Luddington.
	Cumberland	163	1	Joseph Harris.
	Glamorgan	212	1	D. T. Alexander.
	Gloucestershire. . .	352	2	H. D. Brocklehurst; R. Gray.
	Huntingdonshire . .	48	1	John Rowell.
	Kent	409	2	T. L. Aveling; H. F. Plumptre.
	Lincolnshire	339	2	John Evens; C. W. Tindall.
	Oxfordshire	196	1	Robert Hobbs.
	Somerset	198	1	Lord Strachie.
	Sussex	343	2	U. Roland Burke; Sir Merrik R. Burrell.
	Warwickshire . . .	238	1	Capt. R. Oliver-Bellasis.
	Westmorland. . . .	91	1	Lord Henry Bentinck
	Yorkshire, E.R. . .	164	1	Capt. T. L. Wickham-Boynton.
	Ireland	111	1	Right Hon. F. Wrench.
	North Wales. . . .	280	1	A. E. Evans.
		—3,560	—20	
Foreign Countries		264		
Members with no Addresses .		28		
Grand Totals.		12,020	65	

TABLE SHOWING THE NUMBER OF GOVERNORS AND MEMBERS IN EACH YEAR FROM THE ESTABLISHMENT OF THE SOCIETY.

Year ending with Show of	President of the Year	Governors		Members			Total
		Life	Annual	Life	Annual	Honorary	
1839	3rd Earl Spencer	—	—	—	—	—	1,100
1840	5th Duke of Richmond	86	189	146	2,484	5	2,860
1841	Mr. Philip Pusey	91	219	231	4,047	7	4,595
1842	Mr. Henry Handley	101	211	328	5,194	15	5,849
1843	4th Earl of Hardwicke	94	209	429	6,155	15	6,902
1844	3rd Earl Spencer	95	214	442	6,161	15	6,927
1845	5th Duke of Richmond	94	198	527	5,899	15	6,733
1846	1st Viscount Portman	92	201	554	6,105	19	6,971
1847	6th Earl of Egmont	91	195	607	5,478	20	6,391
1848	2nd Earl of Yarborough	93	186	648	5,387	21	6,335
1849	3rd Earl of Chichester	89	178	582	4,643	20	5,512
1850	4th Marquis of Downshire	90	169	627	4,356	19	5,261
1851	5th Duke of Richmond	91	162	674	4,175	19	5,121
1852	2nd Earl of Ducie	93	156	711	4,002	19	4,981
1853	2nd Lord Ashburton	90	147	739	3,928	19	4,923
1854	Mr. Philip Pusey	88	146	771	4,152	20	5,177
1855	Mr. William Miles, M.P.	89	141	795	3,838	19	4,882
1856	1st Viscount Portman	85	139	839	3,896	20	4,979
1857	Viscount Ossington	83	137	896	3,933	19	5,068
1858	6th Lord Berners	81	133	904	4,010	18	5,146
1859	7th Duke of Marlborough	78	130	927	4,008	18	5,161
1860	5th Lord Walsingham	72	119	927	4,047	18	5,183
1861	3rd Earl of Powis	84	90	1,113	3,328	18	4,633
1862	H.R.H. The Prince Consort 1st Viscount Portman	83	97	1,151	3,475	17	4,823
1863	Viscount Eversley	80	88	1,263	3,735	17	5,183
1864	2nd Lord Feversham	78	45	1,343	4,013	17	5,496
1865	Sir E. C. Kerrison, Bart., M.P.	79	81	1,386	4,190	16	5,752
1866	1st Lord Tredegar	79	84	1,395	4,049	15	5,622
1867	Mr. H. S. Thompson	77	82	1,388	3,903	15	5,465
1868	6th Duke of Richmond	75	74	1,409	3,888	15	5,461
1869	H.R.H. The Prince of Wales, K.G.	75	73	1,417	3,864	17	5,446
1870	7th Duke of Devonshire	74	74	1,511	3,764	15	5,436
1871	6th Lord Vernon	72	74	1,589	3,896	17	5,648
1872	Sir W. W. Wynn, Bart., M.P.	71	73	1,655	3,953	14	5,768
1873	Earl Cathcart	74	62	1,832	3,936	12	5,916
1874	Mr. Edward Holland	76	58	1,944	3,756	12	5,846
1875	Viscount Bridport	79	79	2,058	3,918	11	8,145
1876	2nd Lord Chesham	83	78	2,164	4,013	11	6,349
1877	Lord Skelmersdale	81	76	2,239	4,078	17	6,486
1878	Col. Kingscote, C.B., M.P.	81	72	2,328	4,130	26	6,637
1879	H.R.H. The Prince of Wales, K.G.	81	72	2,453	4,700	26	7,332
1880	9th Duke of Bedford	83	70	2,673	5,083	20	7,929
1881	Mr. William Wells	85	69	2,765	5,041	19	7,979
1882	Mr. John Dent Dent	82	71	2,849	5,059	19	8,080
1883	6th Duke of Richmond and Gordon	78	71	2,979	4,952	19	8,099
1884	Sir Brandreth Gibbs	72	72	3,203	5,408	21	8,776
1885	Sir M. Lopes, Bart., M.P.	71	69	3,356	5,619	20	9,135
1886	H.R.H. The Prince of Wales, K.G.	70	61	3,414	5,569	20	9,134
1887	Lord Egerton of Tatton	71	64	3,440	5,387	20	8,982
1888	Sir M. W. Ridley, Bart., M.P.	66	56	3,521	5,225	16	8,884
1889	Her Majesty Queen Victoria	73	58	3,567	7,153	15	10,866
1890	Lord Moreton	122	58	3,846	6,941	17	10,984
1891	2nd Earl of Ravensworth	117	60	3,811	6,921	19	10,928
1892	1st Earl of Feversham	111	69	3,784	7,066	20	11,050
1893	1st Duke of Westminster, K.G.	107	74	3,786	7,138	21	11,126
1894	8th Duke of Devonshire, K.G.	113	73	3,798	7,212	22	11,218
1895	Sir J. H. Thorold, Bart.	120	80	3,747	7,179	23	11,149
1896	Sir Walter Gilbey, Bart.	126	83	3,695	7,253	23	11,180
1897	H.R.H. The Duke of York, K.G.	126	83	3,705	7,285	24	11,223
1898	5th Earl Spencer, K.G.	121	79	3,687	7,182	25	11,094
1899	Earl of Coventry	116	75	3,656	7,009	23	10,879
1900	H.R.H. The Prince of Wales, K.G.	111	71	3,628	6,832	24	10,666
1901	3rd Earl Cawdor	102	70	3,564	6,338	27	10,033
1902	H.R.H. Prince Christian, K.G.	100	69	3,500	5,955	26	9,650
1903	H.R.H. The Prince of Wales, K.G.	99	62	3,439	5,771	27	9,398
1904	16th Earl of Derby, K.G.	96	68	3,375	5,906	32	9,477
1905	Lord Middleton	89	78	3,212	5,758	33	9,170
1906	Mr. F. S. W. Cornwallis	94	155	3,132	6,189	30	9,600
1907	Earl of Yarborough	91	174	3,076	6,299	29	9,669
1908	Duke of Devonshire	89	178	3,019	6,442	30	9,758
1909	7th Earl of Jersey, G.C.B.	91	177	2,951	6,696	31	9,946
1910	Sir Gilbert Greenall, Bart.	86	166	2,878	6,934	31	10,095
1911	His Majesty King George V.	85	168	2,805	7,191	30	10,279
1912	Lord Middleton	85	170	2,741	7,283	30	10,309
1913	Earl of Northbrook	89	168	2,691	7,474	26	10,448
1914	Earl of Powis	89	173	2,626	7,629	28	10,545
1915	Duke of Portland, K.G.	88	184	2,517	7,313	28	10,130
1916	7th Duke of Richmond and Gordon, K.G.	83	185	2,427	7,526	27	10,248
1917	Mr. Charles Adeane, C.B.	93	210	2,412	8,214	26	10,955
1918	Hon. Cecil T. Parker	102	224	2,395	8,226	25	10,972
1919	Sir J. B. Bowen-Jones, Bart.	119	236	2,411	8,558	24	11,348
1920	H.R.H. The Prince of Wales, K.G.	129	256	2,402	9,208	25	12,020

STATEMENT made to the Council by the Chairman of the Finance Committee, on presenting the Accounts for the year 1920.

Mr. Adeane, in presenting, on behalf of the Finance Committee, the Accounts of the Society for the year 1920, said that the sudden rise in the cost of everything in the year 1920 completely upset all estimates, and the Royal Agricultural Society had suffered with other institutions of a similar nature. Fortunately, the Society had a profitable show at Cardiff, and was able to invest a considerable sum, increasing the Society's income by 450*l.* per annum. There had also been an increase in membership, and the subscriptions showed an additional 501*l.* Those were the only bright spots in the accounts which he had to lay before the Council.

The expenditure had gone up by leaps and bounds—general administration, 1,008*l.*, due to increases in the cost of printing and salaries; printing of Journal, 1,402*l.* The net cost of the trial of agricultural tractors exceeded the estimate by 1,304*l.* The result was that they had a debit balance on the ordinary account of 3,996*l.* The Council would notice that the expenditure included not only cash payments, but all liabilities in connection with the year's transactions; this especially applied to the Journal, and the figure 1,223*l.* was really an estimate. In the future the statement of ordinary income and expenditure would be a cash statement only.

With regard to the balance-sheet, the capital was reduced from 73,275*l.* to 59,993*l.*, showing a decrease of 13,282*l.*

Dealing with the financial position, the depreciation of the Society's investments by 6,085*l.* was negligible so long as they did not have to realize, as the Society's investments were in terminable securities. There remained the loss on the Darlington Show of 7,766*l.* and a debit balance on ordinary account of 3,996*l.*

With regard to the loss on the Show, this had been met out of funds at their disposal to the extent of 6,481*l.*, leaving on December 31st, 1920, a debit balance of 1,285*l.*, and this, with the debit balance on ordinary account of 3,996*l.*, gave the total liability of 5,281*l.* to be met during the current year. It was hoped that this liability would be met by the following amounts:—

	£
Contribution from ordinary account against loss on Show . .	2,500
(This, of course, is contingent on there being no loss at Derby.)	
Reserve fund	1,500
Credit balance on the ordinary account	1,500
	5,500

He would be a bold man who would attempt to forecast any financial result at the present time. They were making every economy that was possible and reducing the cost of the Show. If the elements were kind the Society should come through all right.

But, after all, the real strength of the Society rested on the support which it received from the general body of agriculturists throughout the country.

In 1905 the membership stood at 9,170; to-day it was 12,272. It was still far short of what it should be, if any consideration was given to the great record which the Society had behind it and the work which still lay ahead, for in the improvement and maintenance of agriculture at a high level there could be no sitting by with folded hands.

He would appeal to members of the Council to do everything they could to increase the membership of the Society. It should be possible to bring at least 1,000 during the year. Agriculturists had always rallied to the Society in difficult times, and he had not the least doubt they would do so again.

Mr. ADEANE then presented the following estimate for the present year:—

FORECAST OF ORDINARY RECEIPTS AND EXPENDITURE FOR 1921.

(Other than in respect of the Show.)

Prepared by direction of the Finance Committee on the basis of the recommendations of September 21st, 1905 made by the Special Committee.

Actual Figures for 1920.			
	Receipts.		
£			£
10,488	From Subscriptions for 1921 of Governors and Members		10,500
287	From Interest on Daily Balances		200
2,546	From Interest on Investments		2,546
687	From Sales of Text Book, Pamphlets, &c.		700
	(This does not include the sales of Journals which are deducted from the cost of production.)		
1,551	Receipts from Tractor Trials		—
15,559			13,946
	Expenditure.		
£			£
2,416	Salary of Secretary and Official Staff		2,899
140	Pensions to Officials		440
1,099	Rent, Lighting, Cleaning, Wages, &c. (say)		1,050
1,160	Printing and Stationery		1,100
328	Postages and Telegrams		330
408	Miscellaneous		350
1,223	Journal		1,200
722	Chemical Department		715
150	Contribution to Woburn Farm		150
239	Contribution to Hills' Bequest		230
250	Botanical Department		250
200	Zoological Department		200
404	Veterinary Department		200
100	Grant to Research Institute, University College, Reading		100
53	Consulting Engineer		52
188	Examinations for National Diploma (R.A.S.E. Share)		220
2,500	Amount set aside towards loss on Shows		2,500
11,580			11,986
	Exceptional Expenditure.		
—	Legal Charges		150
875	Reprint of Society's Text Book		—
189	Emergency Committee		—
206	Occasional Notes to Members		—
50	Library—Binding of Books, &c.		100
10	Subscription to Conjoint Board of Scientific Societies		—
1,633	Excess expenditure in production of Journal		—
158	Printing Farm Account Books		75
4,855	Trials of Agricultural Tractors		—
19,556			12,311
	Estimated Receipts	13,946	
	Estimated Expenditure	12,311	
Debit Balance— 3,997	Estimated Receipts over Expenditure	1,635	

STATEMENT OF RECEIPTS AND EXPENDI-

JUNE 29 TO

Receipts.

Correspond-ing figures for 1919. £		£	s.	d.	£	s.	d.	£	s.	d.
2,000	Subscription from Town of Darlington							2,000	0	0
2,951	Prizes given by Agricultural and Breed Societies				2,824	5	0			
982	Prizes given by Darlington Local Committee				1,390	0	0			
3,933								4,214	5	0
118	Contribution to Show Fund							500	0	0
	FEES FOR ENTRY OF IMPLEMENTS:—									
7,524	Implement Exhibitors' Payments for Shedding				10,151	10	9			
152	Non-Members' Fees for Entry of Implements				227	0	0			
174	Fees for Entry of "New Implements"				156	0	0			
7,850								10,534	10	9
	FEES FOR ENTRY OF LIVE STOCK:—									
3,155	By 2,871 Members' Entries @ 30*s.*				4,306	10	0			
31	16 Members' Entries @ 1*l.*				16	0	0			
152	478 Members' Entries @ 10*s.*				239	0	0			
3	40 Members' Entries @ 2/6				5	0	0			
5	28 Substituted Entries @ 5*s.*				7	0	0			
—	22 Nurse Cows @ 1*l.*				22	0	0			
657	343 Non-Members' Entries @ 3*l.*				1,029	0	0			
18	5 Non-Members' Entries @ 2*l.*				10	0	0			
52	47 Non-Members' Entries @ 15*s.*				35	5	0			
2	6 Substituted Entries @ 10*s.*				3	0	0			
577	Horse Boxes (530 @ 1*l.*; 108 @ 2*l.*)				746	0	0			
4,652								6,418	15	0
	FEES FOR ENTRY OF POULTRY:—									
39	By Members:—313 Entries @ 4*s.*				62	12	0			
289	By Non-Members:—1,153 Entries @ 6*s.*				345	18	0			
328								408	10	0
	OTHER ENTRY FEES:—									
87	Produce				121	8	0			
68	Rabbits				147	14	0			
82	Horse-jumping Competitions				53	0	0			
8	*Timbering Competition*				—					
29	Plantation Competition				27	18	0			
274								350	0	0
	CATALOGUE:—	£	s.	d.						
10	Extra Lines for Particulars of Implement Exhibits	11	7	0						
27	Woodcuts of "New Implements"	9	11	3						
804	Advertising in Catalogue	1,543	10	6						
29	Sales of Implement Section of Catalogue	47	5	6						
1,344	Sales of Combined Catalogue	1,730	1	7						
20	Sales of Jumping Programme	75	1	5						
2,234					3,416	17	3			
49	*Less* Commission on Sales				46	11	6			
2,185								3,370	5	9
	MISCELLANEOUS RECEIPTS:—									
491	Admission to Flower Show				791	9	6			
258	Garage				581	3	8			
—	Sale of Old Entrances				67	2	6			
94	Rent for Railway Offices				90	0	0			
60	Premium for Cloak Rooms				60	0	0			
30	Rent for Ministry of Agriculture Pavilion				120	0	0			
187	Advertisements in Stock Prize Sheet				177	16	10			
11	Advertisements in Showyard				11	7	0			
—	Sale of Band Stand				62	13	0			
12	Miscellaneous				1	8	4			
1,143								1,963	0	10
£22,483	Carried forward							£29,759	7	4

TURE OF THE SHOW AT DARLINGTON,
JULY 3, 1920

Expenditure.

Corresponding figures for 1919.							
£		£	s.	d.	£	s.	d.
	COST OF ERECTION OF SHOWYARD:—						
1,790	Transferring Society's Permanent Buildings from Cardiff to Darlington (including taking down and re-erecting)	2,067	12	0			
646	Fencing round Showyard	1,141	9	10			
1,445	Implement Shedding	3,267	14	9			
3,396	Stock Shedding	7,737	3	8			
361	Poultry and Produce Sheds	656	10	7			
220	Rabbit Shed	358	5	3			
425	Dairy	512	13	11			
109	Fodder Shed and Office	109	11	4			
473	Education and Forestry	745	17	9			
469	Grand Stand and Large Ring	802	6	4			
727	Various Offices and Stands	1,582	18	2			
521	Painting Signs and fixing do., Fencing and Judging Rings	950	17	3			
40	Insurance	62	13	9			
270	Ironmongery	153	15	3			
1,423	Hire of Canvas	2,339	13	9			
1,726	New Timber	7,528	13	1			
4,033	General Labour and Horse Hire (including Society's Clerk of Works	5,031	8	6			
—	Temporary Entrance to Show	388	12	5			
49	*Extra Travelling Expenses*	—					
—	Bee Shed	65	11	11			
18,123		36,403	0	6			
40	*Less* Rent of 80 Flagpoles at 10s.	40	0	0			
18,083					36,363	9	6
	SURVEYOR:—						
465	Salary, 400*l.*; Assistant Surveyor's Salary, 150*l.*; Travelling Expenses to London, 29*l.* 8*s.*; Clerk, 10*l.* 10*s.*; Petty Cash, 7*l.* 17*s.* 0*d.*				597	15	6
	PRINTING:—						
1,540	Printing of Prize Sheets, Entry Forms, Admission Orders, Circulars to Exhibitors, Prize Cards, Tickets and Miscellaneous	1,157	10	3			
96	Programmes for Members	106	5	0			
54	Plans of Showyard	69	0	0			
2,476	Printing of Catalogues	3,982	11	6			
217	Binding of Catalogues	220	11	6			
87	Carriage of Catalogues	148	4	11			
48	Printing Awards	35	0	0			
59	Programmes of Jumping Competitions	26	0	0			
4,577					6,045	3	2
	ADVERTISING:—						
185	Advertising Closing of Entries in Newspapers	278	8	6			
298	Advertising Show in Newspapers	390	8	9			
300	Bill Posting	304	1	3			
281	Printing of Posters, &c.	358	12	0			
33	Press Visit	74	13	6			
—	Carriage	5	6	10			
1,097					1,411	10	10
	POSTAGE, CARRIAGE, &c.:—						
152	General Postage	187	10	2			
57	Postage of Badges to Members	83	18	2			
10	Carriage of Luggage	19	3	4			
219					290	11	8
8,728	AMOUNT OF PRIZES AWARDED, including 4,217*l.* 15*s.* 0*d.* given by various Societies and Darlington Local Committee				10,222	15	0
	COST OF FORAGE FOR LIVE STOCK:—						
1,834	Hay, 1,472*l.* 1*s.* 3*d.*; Straw, 906*l.* 7*s.* 8*d.*; Green Food, 868*l.* 13*s.* 7*d.*; Cartage and Labour, 289*l.* 10*s.* 6*d.*; Carriage, 79*l.* 8*s.* 1*d.*; Stewards' Exp. 30*l.* 11*s.* 7*d.*; Petty Cash, 22*l.* 18*s.* 9*d.*				3,669	11	5
	JUDGES' FEES AND EXPENSES:—						
945	Judges of Miscellaneous Implements, 39*l.* 18*s.* 3*d.*; Horses, 136*l.* 17*s.* 11*d.*; Cattle, 244*l.* 16*s.* 11*d.*; Sheep, 201*l.* 6*s.* 8*d.*; Pigs, 103*l.* 11*s.*; Goats, 8*l.* 18*s.* 9*d.*; Poultry, 29*l.* 2*s.* 0*d.*; Rabbits, 11*l.* 1*s.*; Produce, 58*l.* 19*s.* 1*d.*; Luncheons, 104*l.*				938	11	7
106	Badges for Judges and other Officials				114	5	11
115	Rosettes				95	9	8
£36,169	Carried forward				£59,749	4	3

Receipts (*contd.*).

Corresponding figures for 1919. £		£	*s.*	*d.*	£	*s.*	*d.*
22,483	Brought forward				29,759	7	4
	ADMISSIONS TO SHOWYARD :—						
2,127	Tuesday, June 29, @ 5*s.*	2,836	18	9			
6,651	Wednesday, June 30, @ 3*s.*	7,662	10	6			
10,209	Thursday, July 1, @ 3*s.*	7,845	16	10			
3,513	Friday, July 2, @ 2*s.*	3,456	12	0			
3,206	Saturday, July 3, @ 2*s.*	2,651	13	2			
993	Season Tickets	663	10	0			
562	Day Tickets	777	12	0			
27,261					25,894	13	3
	ENTRANCES TO HORSE RING :—						
385	Wednesday, June 30	384	2	6			
423	Thursday, July 1	375	0	0			
269	Friday, July 2	303	8	0			
162	Saturday, July 3	258	14	0			
1,048	Tickets sold for Reserved Enclosure.	881	14	2			
2,287					2,202	18	8
	SALES :—						
197	Sales of Produce at Dairy				347	18	8
509	Auction Sales in Showyard (Share of Commission)				1,082	7	0
					59,287	4	11
—	Debit Balance				7,766	5	8
£52,737					£67,053	10	7

Examined, audited, and found correct, this 25th day of November, 1920.

THOMAS McROW, *Secretary*
DELOITTE, PLENDER, GRIFFITHS & CO., *Accountants.*

JONAS M. WEBB.
H. J. GREENWOOD. } *Auditors on behalf of the Society.*

Expenditure (*contd.*).

Corresponding figures for 1919.		£	s.	d.	£	s.	d.
£							
36,169	Brought forward				59,749	4	3
	GENERAL ADMINISTRATION :—						
172	*Stewards* :—Personal and Railway Expenses	272	18	6			
168	*Assistant Stewards* :—Personal and Railway Expenses	237	2	8			
451	*Official Staff* :—Extra Clerks, 278*l.* 17*s.* 10*d.*; Lodgings, 56*l* 8*s.* 0*d.*; Maintenance of Clerks, 66*l.* 2*s.* 6*d.*; Travelling Expenses, 33*l.* 8*s.* 9*d.*; Secretary's Hotel and Travelling Expenses 125*l.* 12*s.* 5*d.*	560	9	6			
180	*Finance Office* :—Finance Clerk, 9*l.* 5*s.* 6*d.*; Grand Stand Men, 82*l.* 10*s.* 7*d.*; Turnstile Men, 60*l.*; Bank Clerks, 51*l.* 11*s.* 6*d.*; Refreshments, 2*l.* 2*s.*	205	9	7			
57	*Awards Office* :—Clerks, 39*l.* 14*s.* 7*d.*; Awards Boys, 20*l.* 5*s.* 0*d.*	59	19	7			
1,028					1,335	19	10
	General Management :—						
132	Foreman and Assistant Foremen	154	7	11			
72	Yardmen and Foddermen	151	2	7			
133	Door and Gate Keepers	259	9	3			
109	*Veterinary Department* :—Veterinary Inspectors	156	19	5			
80	*Engineering Department* :—Consulting Engineer and Assistant, 69*l.* 9*s.* 6*d.*; House, Maintenance, and Travelling Expenses, 46*l.* 7*s.* 9*d.*	115	17	3			
619	*Police, &c.* :—Local Police, 456*l.* 13*s.* 2*d.*; Commissionaires, 17*l.* 2*s.* 6*d.*	473	15	8			
1,145					1,311	12	1
561	*Dairy* :—Staff, 379*l.* 8*s.* 8*d.*; Milk, 178*l.* 0*s.* 6*d.*; Ice, 33*l.*; Utensils, 179*l.* 0*s.* 3*d.*; Salt, 2*l.* 4*s.*; Engine, 29*l.* 6*s.* 6*d.*; Butter Tests, 45*l.* 7*s.* 2*d*; Shafting, 5*l.* 1*s.* 9*d.*; Lodgings, 13*l.* 11*s.*; Butter and Cheese Boxes, 8*l.* 14*s.* 3*d.*; Milk Analysis, 47*l.* 5*s.* 10*d.*; Refreshments, 30*l* 10*s.* 3*d.*; Labour, 22*l.* 19*s.* 6*d.*; Fuel, 4*l.* 6*s.* 4*d.*; Miscellaneous, 34*l.* 2*s.* 5*d.*; Purchase of Cheese, 3*l.* 6*s.* 0*d.*	1,016	4	5			
11	Analysis of Cider	19	5	2			
168	*Poultry* :—Superintendent, 19*l.* 8*s.*; Penning and Feeding, 197*l.* 8*s.*; Labour, 37*l.* 9*s.* 3*d*; Carriage, 26*l.* 2*s.*; Demonstrator, 16*l.* 16*s.*; Refreshments, 2*l.* 6*s* 8*d.*	299	9	11			
—	*Rabbits* :—Superintendent, 10*l.* 8*s.*; Carriage, 12*l.* 7*s.* 6*d.*	22	15	6			
740					1,357	15	0
437	*Flower Show* :—Hire of Tents, 438*l.* 1*s.* 8*d.*; Judges, 27*l.* 6*s.* 0*d.*; Wages, 95*l.* 10*s.* 9*d.*; Medals, 35*l.*; Printing, 20*l.*; Advertising, 3*l.* 18*s.*; Carriage, 8*l.* 7*s.* (For Admissions see Miscellaneous Receipts.)				628	3	5
—	Plantation Competition				93	16	2
	GENERAL SHOWYARD EXPENSES :—						
282	Telephone Extension	450	0	11			
240	Telegraph Extension	257	0	0			
59	Hire of Chairs	45	7	6			
57	Hire of Furniture	318	10	0			
125	Official Luncheons	71	12	5			
—	St. John Ambulance	60	0	0			
64	Plans of Yard	57	2	2			
40	Medals	11	5	0			
29	Hire of Weighbridge	39	4	8			
18	Billposting in Showyard	13	16	0			
20	Engraving Cups	22	1	10			
57	Education and Forestry	114	8	4			
29	*Sleepers*		—				
11	*Flags and Cord*		—				
11	Carriage	16	13	6			
38	*Hire of Bath Chairs*		—				
11	Gas and Fittings	43	1	5			
9	Tan	15	0	0			
—	Clerk of Works, Petty Cash	19	0	3			
7	Hire of Safes and Typewriters	18	12	0			
—	Horse and Carriage Hire	12	0	0			
42	Miscellaneous	86	16	6			
1,149					1,666	12	6
29	Outstanding Accounts from Cardiff Show				910	7	4
12,039	*Credit Balance*					—	
£52,737					£67,053	10	7

	£	s.	d.
Actual loss on the Darlington Show	£7,766	5	8
Less :—Contribution from the Ordinary Account to Show Fund	2,500	0	0
	£5,266	5	8

STATEMENT OF ORDINARY INCOME

The Expenditure in this account includes not only cash payments,

Income.

Corresponding figures for 1919. £		£ s. d.	£ s. d.
	ANNUAL SUBSCRIPTIONS:—		
1,270	*Governors:* Subscriptions for 1920	1,342 5 0	
62	*Members:* Received in 1919, but belonging to 1920	94 4 0	
8,287	Subscriptions for 1920	8,788 9 11	
115	Subscriptions for 1920 (additional)	145 12 6	
183	Subscriptions for previous years	57 1 0	
	LIFE GOVERNORS AND MEMBERS:—		
61	Annual Contributions	60 2 0	10,487 14 5
9,978			
	MISCELLANEOUS:—		
249	Interest on Daily Balances	286 13 2	
2,093	Income from Investments	2,546 0 4	
175	Sales of Pamphlets, Farm Account Books and Diagrams	124 12 6	
1,152	Sales of Text Book	519 14 1	
333	Royalty on ditto		
69	Sales of Library Catalogues	8 15 6	
27	Miscellaneous	34 5 7	3,520 1 2
4,098			
	TRIALS OF AGRICULTURAL TRACTORS:—		
	Entry Fees, Sales of Catalogues, Receipts at Garage		1,550 17 8
	Rent of 12 Hanover Square	231 0 0	
	Less Rent paid	231 0 0	
14,076			15,558 13 3
23	DEBIT BALANCE CARRIED TO BALANCE SHEET		3,996 18 5
£14,099			£19,555 11 8

THOMAS McROW, *Secretary.*
DELOITTE, PLENDER, GRIFFITHS & CO., *Accountants.*

AND EXPENDITURE FOR THE YEAR 1920.

but all liabilities in connection with the year's transactions.

Expenditure.

Corresponding figures for 1919. £		£	s.	d.	£	s.	d.	£	s.	d.
	GENERAL ADMINISTRATION :—									
2,025	Salaries of Official Staff (including clerical assistance)				2,416	4	2			
140	Pensions to Officials				140	0	0			
80	Legal Charges and Auditors' Fees				83	9	6			
1,022	Rent, Rates, Taxes, Insurance, and House Expenses				1,098	15	6			
13	Purchase of Books				20	11	1			
857	Printing and Stationery				1,160	3	11			
181	Postage and Telegrams				327	15	8			
80	Carriage of Parcels and Travelling Expenses				93	4	1			
83	Advertising and Miscellaneous Office Expenses				149	5	11			
4,481								5,489	9	10
	JOURNAL OF THE SOCIETY, VOL. 81 :—									
848	Printing and Binding				1,182	17	3			
245	Postage, Packing, and Delivery				480	0	0			
250	Editing and Literary Contributions				270	0	0			
60	Illustrations				117	2	9			
1,403					2,000	0	0			
—	*Less* Sales (Vol. 80 and earlier)	76	17	5						
403	Advertisements (Vol. 81)	700	0	0						
					776	17	5			
1,000								1,223	2	7
231	Excess expenditure in production of Vol. 80							1,632	19	2
1,372	Printing Text Book							875	0	0
68	Printing Farm Account Books							158	3	5
—	Printing Pamphlets							61	15	6
	LABORATORY :—									
785	Salary and Petty Cash							722	1	6
	OTHER SCIENTIFIC DEPARTMENTS :—									
275	Botanist's Salary				250	0	0			
220	Zoologist's Salary				200	0	0			
53	Consulting Engineer				52	10	0			
400	Grant to Royal Veterinary College				400	0	0			
100	Grant to Research Institute, University College, Reading				100	0	0			
3	Medals for Proficiency in Cattle Pathology				4	4	0			
1,051								1,006	14	0
	NATIONAL DIPLOMA IN AGRICULTURE :—									
154	Honoraria and Expenses of Examiners				199	10	9			
55	Travelling Expenses of Officials				118	1	8			
38	Hotel Expenses of Examiners and Officials				74	1	4			
58	Printing, Stationery, and Postage				94	15	6			
7	Writing Diplomas				16	19	6			
74	Salaries for Assistants				75	0	0			
386					578	8	9			
76	*Less* Entry Fees and Sales of Examination Papers				300	8	8			
310					278	0	1			
155	*Less* Highland and Agricultural Society's Moiety				139	0	1			
155								139	0	0
	NATIONAL DIPLOMA IN DAIRYING :—									
21	Hire of Premises, &c.				17	12	7			
79	Fees to Examiners				63	15	7			
38	Hotel and Travelling Expenses				34	6	2			
21	Printing and Postage				46	4	6			
159					161	18	10			
65	*Less* Entry Fees and Sales of Examination Papers				112	16	6			
94								49	2	4
	EXTRA EXPENDITURE :—									
38	Library :—Binding of Books, &c.				49	17	6			
135	Hills' Bequest :—Contribution for current year				238	11	0			
193	Emergency Committee				188	19	2			
1,450	Contribution towards Woburn Farm				150	0	0			
10	Subscription to Conjoint Board of Scientific Societies				10	0	0			
181	Occasional Notes to Members				206	3	1			
175	*Honorarium to Staff*				—					
180	*Painting Society's House*				—					
2,362								843	10	9
2,500	AMOUNT SET ASIDE TOWARDS LOSS ON SHOWS							2,500	0	0
	TRIAL OF AGRICULTURAL TRACTORS :—									
—	Cost of Trials (for details see separate statement)							4,854	12	7
£14,099								£19,555	11	8

Examined, audited, and found correct, this 24th day of February, 1921.

JONAS M. WEBB.
H. J. GREENWOOD. } *Auditors on behalf of the Society.*
NEWELL P. SQUAREY.

Dr.

BALANCE SHEET,

Corresponding figures for 1919. £		£ s. d.	£ s. d.	£ s. d.
	To SUNDRY CREDITORS—			
4,608	Sundry Creditors		5,850 16 0	
94	Subscriptions received in 1920 in advance . .		176 14 0	
1,981	Show receipts received in 1920 but belonging to 1921 less expenses		1,870 13 6	
6,683				7,898 3 6
	To OVERDRAFT at Bank			1,258 1 11
	To CAPITAL—			
61,048	As at December 31, 1919		73,275 8 5	
	Deduct			
	SHOW FUND—			
12,039	*Profit* Loss on Show at Darlington	7,766 5 8		
2,500	*Less* amount set aside from ordinary account .	2,500 0 0	5,266 5 8	
	Add		68,009 2 9	
1,612	Life Compositions received in 1920 . . .		2,139 0 0	
50	Donation towards the Society's Funds . . .		115 13 0	
77,249			70,263 15 9	
23	*Less* Debit balance on ordinary income and expenditure account		3,996 18 5	
81	*sundry debts unrecoverable.*			
77,145			66,266 17 4	
	DEPRECIATIONS written off, viz. :—			
1,849	War Stock 5 per cent. (1929–1947) . . .	5,538 17 11		
682	Metropolitan 3 per cent. (1941)	56 16 3		
1,110	Canadian 4 per cent. (1940–1960) . . .	489 12 2		
18	Fixtures	16 11 2		
62	Furniture	59 6 7		
3	Machinery	8 2 8		
96	Show Plant	86 0 10		
50	Buildings at Woburn	22 19 2	6,273 6 9	
3,870				59,993 10 7
73,275				
£79,958				£69,149 16 0

THOMAS McROW, *Secretary.*

DELOITTE, PLENDER, GRIFFITHS & CO., *Accountants.*

SOCIETY OF ENGLAND.

DECEMBER 31, 1920. *Cr.*

Corresponding figures for 1919. £		£ s. d.	£ s. d.
	By RESERVE FUND—		
59,706	65,163*l.* 9*s.* 1*d.* 5 per cent. War Stock (1929–1947) @ 83½*		54,167 2 5
387	500*l.* War Saving Certificates @ cost		387 10 0
1,818	2,840*l.* 13*s.* 6*d.* Metropolitan 3 per cent. Consolidated Stock (1941) @ 62*		1,761 4 4
5,190	6,528*l.* 1*s.* 6*d.* Canadian 4 per cent. Stock (1940–1960) @ 72*		4,700 4 3
	* Written down to market value at 31 Dec., 1920.		
	By LEASE OF 16 BEDFORD SQUARE	1,700 0 0	
1,700	*Less* Amount written off	100 0 0	1,600 0 0
	By FIXTURES—		
	Value at December 31, 1919	220 16 1	
221	*Less* Depreciation at 7½ per cent.	16 11 2	204 4 11
	By FURNITURE—		
	Value at December 31, 1919	593 5 10	
593	*Less* Depreciation at 10 per cent.	59 6 7	533 19 3
1,571	By PICTURES (500*l.*) and BOOKS (1,071*l.* 4*s.* 10*d.*)		1,571 4 10
	By MACHINERY—		
	Value at December 31, 1919	31 7 0	
	Less Depreciation at 10 per cent.	3 2 8	
		28 4 4	
31	Added during 1920	65 16 10	94 1 2
	By SHOW PLANT—		
	Value at December 31, 1919	860 8 5	
860	*Less* Depreciation at 10 per cent.	86 0 10	774 7 7
	By BUILDINGS FOR POT EXPERIMENTS AT WOBURN—		
	Additions and improvements during 1920	91 16 8	
—	*Less* Depreciation at 25 per cent.	22 19 2	68 17 6
2,011	By SUNDRY DEBTORS		2,952 10 3
	By CASH AT BANKERS AND IN HAND—		
	Reserve Fund	323 0 0	
5,870	In Hand	11 9 6	334 9 6
£79,958			£69,149 16 0

Examined, audited, and found correct, this 24th day of February, 1921.

JONAS M. WEBB.
H. J. GREENWOOD. } *Auditors on behalf of the Society.*
NEWELL P. SQUAREY.

TRIALS OF AGRICULTURAL TRACTORS.

STATEMENT OF RECEIPTS AND EXPENDITURE, DECEMBER 31ST, 1920.

RECEIPTS.

	£	s.	d.
By Entry Fees	1,020	0	0
„ Sales of Catalogues	117	1	2
„ Receipts at Garage	30	8	10
„ Advertisements	383	7	8
	1,550	17	8
To Balance	3,303	14	11
	£4,854	12	7

EXPENDITURE.

	£	s.	d.
To Judges	894	16	6
„ Observers	390	9	2
„ Engineers	586	16	3
„ Labour and Horse Hire	508	2	9
„ Board and Lodgings for Judges and Officials	470	16	9
„ Printing	446	17	6
„ Police	153	13	10
„ Official Luncheons and Teas	157	17	7
„ Fuel	269	12	0
„ Bus and Motor Hire	178	17	7
„ Advertising	75	19	0
„ Stewards' Expenses	90	16	10
„ Prizes	180	0	0
„ Medals	139	1	0
„ Hire of Aerodrome	101	5	0
„ Hire of Tents	56	6	6
„ Haulage	47	6	9
„ Insurance	15	6	3
„ Telephone	19	16	7
„ Hire of Weighing Machines	14	4	8
„ Hire of Machinery	2	1	0
„ Ironmongery	5	3	6
„ Secretary and Staff, Travelling Expenses	19	13	10
„ Carriage and Miscellaneous	9	11	9
	£4,854	12	7

Examined, audited, and found correct, this 24th day of February, 1921.

THOMAS McROW, *Secretary.*

DELOITTE, PLENDER, GRIFFITHS & CO., *Accountants.*

JONAS M. WEBB,
H. J. GREENWOOD,
NEWELL P. SQUAREY, } *Auditors on behalf of the Society.*

Royal Agricultural Society of England.

STATEMENT OF FUNDS HELD BY THE SOCIETY IN TRUST OR WHICH ARE NOT CONSIDERED AVAILABLE FOR GENERAL PURPOSES, DECEMBER 31, 1920.

	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Hills' Bequest for Pot-culture Experiments . .			9,000 0 0	By 5,560*l.* 17*s.* 8*d.* 5% War Stock (1929–1947) received under the conversion rights for 5,282*l.* 17*s.* 6*d.* 4½% War Stock		5,282 17 6
Less: Depreciation of Consols at time of conversion . .		3,582 7 11		(*Value on December* 31, 1920, at 83⅛ = 4,622*l.* 9*s.* 8*d.*)		
„ Cost of conversion . .		134 14 7	3,717 2 6			
			5,282 17 6			5,282 17 6
To Fund provided by the late Sir Walter Gilbey for Endowment of Lectureship at Cambridge when after a certain date any balance on this account will become the property of the Society . .			1,189 19 10	By 1,140*l.* Metropolitan Water A Stock at cost . .		998 1 0
				(*Value on December* 31, 1920, at 50½ = 575*l.* 14*s.* 0*d.*)		
				By amount included in the Society's Sundry Creditors' Account:—		
				Fund uninvested	1 19 0	
				Accumulated income . . .	189 19 10	191 18 10
			£1,189 19 10			£1,189 19 10
To Superannuation and Insurance Fund:—				By Investments in names of Trustees of Superannuation and Insurance Funds, viz.:—		
Amount set aside in accordance with Declaration of Trust of July 26, 1911 . . .	9,171 5 0			7,449*l.* 12*s.* 4*d.* 5% War Stock (1929–1947) received under the conversion rights for 7,077*l.* 3*s.* 8*d.* 4½% War Stock		7,077 3 8
Less: Depreciation of Consols at time of conversion .	1,837 18 4			(*Value on December* 31, 1920, at 83⅛ = 6,192*l.* 9*s.* 10*d.*)		
„ Cost of conversion	256 3 0	2,094 1 4		443*l.* 3*s.* 11*d.* West Australian 3½% Stock (1935–1955) at cost		359 17 4
			7,077 3 8	(*Value on December* 31, 1920, at 62 = 274*l.* 15*s.* 7*d.*)		
Income Tax payable on War Stock Interest . .			223 9 8	235*l.* 18*s.* 6*d.* Queensland 3½% Stock (1950–1970) at cost		185 10 4
Accumulations to December 31, 1920 . .			756 10 5	(*Value on December* 31, 1920, at 55 = 129*l.* 15*s.* 2*d.*)		
				Cash at Bank		434 12 5
			£8,057 3 9			£8,057 3 9

Examined, audited, and found correct, this 24th day of February, 1921.

THOMAS McROW, *Secretary.*
DELOITTE, PLENDER, GRIFFITHS & CO., *Accountants.*

JONAS M. WEBB,
H. J. GREENWOOD,
NEWELL P. SQUAREY, } *Auditors on behalf of the Society.*

[Copies of the full Report of any of the Council Meetings held during the year 1920 may be obtained on application to the Secretary, at 16 Bedford Square, London, W.C.1.]

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Minutes of the Council.

WEDNESDAY, FEBRUARY 4, 1920.

Sir J. B. Bowen-Jones, Bart. (Trustee), in the Chair.

In the unavoidable absence of the President, H.R.H. the Prince of Wales, Sir J. B. Bowen-Jones, Bart., was called to the Chair, on the motion of Sir John Thorold, seconded by Mr. Adeane.

Before proceeding with the business of the meeting, the Chairman announced that His Royal Highness had expressed his regret that he was unable to be present.

Mr. W. H. Bradwell, Thurland Street, Nottingham, Mr. William Carr, "Rosehill," Dodworth, near Barnsley, and Capt. Arthur G. Soames, O.B.E., Ashwell Manor, Penn, High Wycombe, were elected as Governors, and 158 duly nominated candidates were admitted into the Society as Members.

On presentation of the Report of the Chemical and Woburn Committee, Mr. Middleton said he thought it was most important that, as suggested by the Committee, combined action should be taken to secure the amendment of the Fertilisers and Feeding Stuffs Act. The most important matter calling for amendment was, he thought, the removal of the power of veto by the Board of Agriculture in cases of prosecution by County Councils. The Act was so loosely drawn that it was almost impossible to secure a conviction, and he thought that was the reason why the Board so frequently withheld their permission for proceedings to be taken. He entirely disagreed with that view. Even if a prosecution were unsuccessful, the attention called to a case did almost as much good as if the prosecution had succeeded.

The Earl of Northbrook presented the Report of the Veterinary Committee, which was adopted; and moved

> "That the Council of the Royal Agricultural Society of England views with the greatest alarm the continued outbreaks of foot-and-mouth disease, and strongly urges upon the Ministry of Agriculture the absolute necessity for the most stringent measures being taken to combat this disease and to prevent its reintroduction. They further ask the Ministry to inform the Society what steps are being taken to deal with this matter."

The Committee, his Lordship said, had given very careful consideration to the serious position arising through the continued prevalence of foot-and-mouth disease in the country, and they were of opinion that the time had arrived when it was desirable that the Council should strongly urge on the Ministry of Agriculture the necessity of taking the most stringent measures to combat the disease. The Committee were also of the opinion that, in view of the serious increase of the number of outbreaks, their wide distribution throughout the country, and the failure of the Ministry to discover how and whence the infection was introduced, the Council were entitled to ask for precise information as to what steps were now being taken by the Ministry in the matter. It was on these grounds that the Committee recommended the Council to pass the resolution. He would like to point out that that resolution did not imply that the Ministry had failed to deal effectively with the outbreaks, nor was it intended to suggest that the Ministry were not doing all they could to deal with them. The Committee felt, however, that they were in the dark, and thought that the Society was entitled to receive that information. They might then be in a position to make some suggestions to assist the Ministry in dealing with what every one would agree was a very difficult problem.

The motion was seconded by Mr. ALFRED MANSELL, and after some remarks by Mr. WM. GRAHAM and Mr. DAVIS BROWN, was unanimously adopted.

LORD NORTHBROOK asked permission to move another resolution, which did not emanate from the VETERINARY Committee, but was closely connected with the resolution just passed. The resolution was as follows:—

> "That in view of the recommendation contained in the final report of the Committee on the Production and Distribution of Milk, recently presented to Parliament, that facilities should be given for the importation of Friesians, the Royal Agricultural Society of England strongly protests against the importation into this country from abroad of any live cattle except for slaughter at port of landing."

He understood that the recommendations of the Departmental Committee on the Production and Distribution of Milk were now receiving the consideration of the Government, and he thought the Council should take the earliest possible opportunity of protesting against the adoption of this particular recommendation of the report as to the importation of cattle from a country in which foot-and-mouth disease at the present time was very largely prevalent.

His Lordship recalled the circumstances in connection with the importation of a number of cattle from Holland in 1914, and stated that it was open to question whether the then President of the Board had not exceeded his powers under Sec. 1 of the Diseases of Animals Act, 1896, when he gave permission for the importation of so large a number of animals.

Mr. MIDDLETON seconded the motion, in support of which Mr. ADEANE, Mr. MANSELL, Mr. WM. GRAHAM and Mr. PILKINGTON also spoke; and it was carried unanimously.

A Report from the WAR EMERGENCY Committee was presented and adopted after a discussion as to the Society's representation on the Agricultural Wages Board, in which Mr. ADEANE, Mr. OVERMAN, Sir AILWYN FELLOWES, Mr. DAVIS BROWN, Mr. JOHN EVENS, Mr. MIDDLETON, and Mr. PATTERSON took part. The Committee in future will be known as the "Emergency Committee."

WEDNESDAY, MARCH 3, 1920.

The MARQUIS OF LONDONDERRY, K.G. (Acting-President), in the Chair.

Sir JOHN THOROLD said that in consequence of the absence of the Prince of Wales from England, the Selection Committee had asked His Royal Highness to appoint a deputy while he was away. He was very happy to say that the Prince of Wales had selected the Marquis of Londonderry to serve as Acting-President during his absence. He felt sure that, having known his Lordship's father, and bearing in mind that the Show was to be at Darlington, they would all welcome him in the chair that day. (Applause.)

The MARQUIS OF LONDONDERRY, in thanking Sir John Thorold for his kind remarks, expressed the great disappointment they all felt that the Prince of Wales found himself unable to preside at the Royal Agricultural Society's Show this year. He felt very deeply the honour of being selected as the deputy of His Royal Highness. He assured the Council that he would do his utmost to carry out the duties of Acting-President, and in doing so he felt that he might rely upon receiving the hearty co-operation of all those he saw around him that day.

Sir J. B. Bowen-Jones said it was with deep regret that he had to announce officially the death of Lord Moreton, one of their trustees, who had been an active member of the Council for the past forty years. As they were all aware, Lord Moreton had served on many of their committees, and, in fact, had at different times filled almost every office in connection with the Society's work. For a considerable period he had been Chairman of the Education Committee, and on the constitution of the National Agricultural Examination Board he became its first chairman. He had also been one of the Society's representatives on the Oxford and Reading Joint Committee, and in many other ways had been closely associated with the cause of agricultural education in this country. Lord Moreton's association with the work of the Shorthorn Society was well known to them all. It would doubtless be their wish that an expression of the Society's sympathy and condolence with Lady Moreton should be forwarded by the Acting-President, together with the following resolution :—

> "That the Council greatly regret the loss they have sustained by the death of Lord Moreton, who had been a member of the Council for forty years, and whose able assistance for so many years and on so many occasions had been of the greatest benefit to the Society and to the cause of agriculture generally."

Those present signified their assent by rising in their places.

Sir Bowen, continuing, said the Council would all be grieved to learn, too, of the death of Mr. Robert W. Hobbs, who had represented Oxfordshire on the Council for sixteen years, and who, in consequence of failing health, had resigned his seat in May last.

The Chairman was asked to convey an expression of the sincere sympathy of the Council to Mrs. Hobbs in the bereavement she and the family had sustained.

Mr. Robert Hobbs, jun., on behalf of Mrs. Hobbs and the family, acknowledged the generous tribute to his late father, and thanked the Council for their vote of condolence. He could assure them that amongst all the honours his father had had conferred upon him, there was none he valued more than his election to that Council, and there was no Society in which he took a closer interest.

Mr. G. R. Bennett, Old House, West Hoathly, Sussex ; Mr. Richard Cornelius, Lutwyche Hall, Much Wenlock, Salop ; and Capt. Philip Eustace-Smith, M.C., Whalton, Morpeth, were elected as Governors, and 69 duly nominated candidates were admitted into the Society as Members.

Mr. Adeane reported that the Emergency Committee had met the previous day and had passed the following resolution :—

> "That this committee has learnt with astonishment of the decision of the Government purporting to encourage the growing of wheat, and is convinced that a continuance of present conditions will lead to a great diminution in the food supply of the nation, and that nothing less than the increase of price indicated in Lord Lee's recent statement to the Press for the 1920 crop of wheat will arrest the decline in the cultivation of that cereal."

Mr. Adeane said that Lord Lee had made an interesting statement to the Press with reference to the Government's proposals for the 1921 crop of wheat. The Minister of Agriculture spoke of the serious shrinkage in the area under wheat of 400,000 acres, up to June last, and pointed out that this would necessitate a very much larger importation of wheat, the average prices of which were over 114*s.* per quarter. Lord Lee went on to say :—

> "At the same time, the reason for this decline of home production is not far to seek. Alone of all the cereal crops, home-grown wheat is still controlled, is denied a free market, and can be sold only to the Government at a maximum price of 76*s.* per quarter. This price was fixed in 1918, at a time when the costs of production, and notably wages, were far lower than they are to-day. Taking those changes into consideration, it has been ascertained that the equivalent of 76*s.* in 1918 is not less than 95*s.* in 1920. Con-

> sequently, whatever the inducement to grow wheat may have been in 1918—and it has proved insufficient—it is nearly £1 a quarter less to-day. Almost any other crop gives the farmer a better return, and in these circumstances it is not surprising that wheat-growing has fallen into disfavour. In fact, the controlled price has acted as a direct and effective deterrent to home wheat production, and in this respect is operating to the detriment of both the consumer and the taxpayer."

That, continued Mr. ADEANE, was the statement of the Minister of Agriculture; therefore the Committee were astonished to see the decision of the Government making no increase in the price for the 1920 crop. When the maximum price was fixed in 1918 farmers understood that it was based upon the cost of production plus a fair profit. That was the formula supposed to be adopted by the Food Controller whenever he fixed prices, as laid down by Lord Rhondda in his speech, reported in *The Times* of January 19, 1918, and was accepted by farmers.

Since 1918 the cost of production had gone up, and it was manifestly unfair to keep wheat at the same price at which it stood in 1918. Indeed, they were clearly told by the Minister of Agriculture that the corresponding price, based on the cost of production, was 95*s.* a quarter. They were entitled, he thought, to ask that, so long as there was control, the formula—the cost of production plus a fair profit—should be adhered to in calculating prices. (Hear, hear.) Judged by that formula, and by the statement of the Minister of Agriculture, the price of wheat fixed for 1920, which was 76*s.* a quarter, was not sufficient to cover the cost of production. Farmers quite understood the difficulties of the Government, but, at the same time, they could not be expected to produce wheat at below the cost of production; it was not business. (Hear, hear.)

He moved the adoption of the Report of the Committee.

Mr. OVERMAN said he had never known the farmers of England so angry as they were at the result of the Government's announcement as to the future prices of wheat. At the meeting of the Emergency Committee it was suggested that Mr. Tindall and himself should take the resolution which had been read by Mr. Adeane and present it personally to Lord Lee. They did so, but made it clear that they did not constitute a deputation from the Society.

As Mr. Adeane had said, farmers were promised the cost of production plus a fair profit, but every one knew that the fair profit had not been forthcoming. But there were few farmers who would complain about the price of 76*s.* if they were allowed to use their wheat for feeding stock. They actually received 76*s.* a quarter for their milling wheat, but they had to pay up to £24 or £25 a ton for feeding stuffs. It was quite possible that there would be many acres of wheat crossed this year with oats and barley, so as to turn the wheat into dredge corn, which would not be for the benefit of the community.

In Government circles it was thought that next October the amount of foreign wheat would be very small. When that time came they would have to encourage the farmer to thresh it for them. It was incumbent upon all agricultural organisations to urge upon the Government the fact that there must be a larger price fixed for the 1920 crop.

Mr. TINDALL said the really important matter was to get the Government to adhere to the principle of the cost of production and a fair profit. The Government were aware that very serious rises in the cost of production had occurred since the 1918 wheat price was fixed, and the prices ought to have been increased accordingly.

The Report of the Committee was carried unanimously.

LORD LONDONDERRY, owing to another engagement, having to leave the meeting, the Chair was taken by Sir J. B. BOWEN-JONES.

The Report of the VETERINARY Committee was presented, including a recommendation:

> "That the Minister of Agriculture be requested to receive a deputation from the Society to discuss the present position with regard to foot-and-mouth disease in this country, with particular reference to the means of its introduction."

After remarks by the **Earl of Northbrook**, Mr. **Middleton**, Mr. **Mansell** and Lord **Strachie**, the Report of the Committee was adopted

WEDNESDAY, MARCH 31, 1920.

The Hon. **Cecil T. Parker** (Trustee) in the Chair.

In the absence of the Acting-President (the Marquis of Londonderry), the Hon. Cecil T. Parker was called to the Chair on the motion of the **Earl of Coventry**, seconded by Sir **John Thorold**.

Mr. John Q. Rowett, of Ely Place, Frant, Tunbridge Wells, was elected as a Governor, and 80 duly nominated candidates were admitted into the Society as Members.

Mr. G. G. **Rea** introduced a deputation from Newcastle-upon-Tyne, who extended an invitation to the Society to hold the Show in that City in 1923. The deputation consisted of: Councillor J. Barker (Deputy Lord Mayor), Councillor R. Mayne (Sheriff of Newcastle), Alderman J. J. Gillespie, Councillor James Cooper, Mr. J. D. Walker (Chairman, Stewards Committee of the Freemen), Mr. A. M. Oliver (Town Clerk) and Earl Grey (representing the Northumberland Agricultural Society).

The **Deputy Lord Mayor**, **Earl Grey** and Mr. J. D. **Walker** having spoken in support of the invitation, it was unanimously resolved, on the motion of the **Chairman**, seconded by the **Duke of Devonshire** :—

> "That the invitation accorded by the deputation from Newcastle-upon-Tyne, to hold the Show in that city in 1923, be accepted, and that the usual agreement with the Corporation be entered into in due course."

On the motion of Mr. **Mansell**, seconded by Mr. **Middleton**, it was resolved :—

> "That the Royal Agricultural Society of England appoint a small deputation to associate themselves with the Central Chamber of Agriculture to wait on Lord Lee with reference to the importation of live stock, and to protest against the importation of Friesian cattle."

Mr. **William Graham** (Governor) drew attention to the slaughter of calves which, he said, was taking place very freely. It was most detrimental to the future supply of dairy cattle, and also to the stock-raising interests of the country. He thought the Society should take some effective means to secure that some check should be placed on the killing of immature animals, otherwise it might eventually give occasion to the Board of Agriculture to introduce Canadian stores. He moved "That this Council draws the attention of the Ministry of Agriculture to the wasteful and indiscriminate slaughter of calves, particularly heifer calves and young stock of the country, which is now taking place, as it must in the near future decrease the breeding stocks and milk supply of Great Britain."

Mr. G. G. **Rea** seconded the motion, and said he fully agreed with Mr. Graham. It was not only the dairy industry, but also the large feeding areas of the country that were really going to feel the hardship. At the present time it was impossible to get store stock, and this was entirely due to the wholesale slaughter of calves during the last year or so. Not only was the supply of beef threatened for the future, but there would be no cattle to break down the straw and make manure.

Mr. **Adeane** said they all had great sympathy with Mr. Graham's remarks with regard to the slaughter of calves, but he thought they should be cautious in this matter. Considering present high prices, it was foolish to kill calves. Surely they might leave it to the farmer to look after his own interests. The Council had approached the Government asking that control should be taken off agriculture as soon as possible. Now they were being invited to ask the Government to put on control again. There was no stability at all in the country; one day they were asking for control, and another day they were asking for control to be taken off. He did hope that the Council would consider very carefully how they proceeded in this matter. He trusted Mr. Graham would see his way to withdraw the resolution. Mr. COMBES opposed the motion. It was a question of the feeder as against the breeder, and he hoped the Council would not take action as suggested. Mr. EVENS supported the remarks made by Mr. Adeane. He believed that the law of supply and demand would provide a remedy for the present state of affairs, which he looked upon as temporary. Mr. FITZHERBERT-BROCKHOLES also spoke against the resolution. It was a matter, he said, for the farmer to put his house in order.

At the request of the Chairman, Mr. Graham subsequently agreed to withdraw his motion.

The SECRETARY reported that letters had been received from Lady Moreton and Mrs. Hobbs, acknowledging the votes of condolence passed by the Council at their last meeting.

WEDNESDAY, MAY 5, 1920.

The MARQUIS OF LONDONDERRY, K.G. (Acting-President), in the Chair.

Mr. Robert D. Holt, High Borrans, Windermere, Mr. Hans Christian Nielsen, Mill Lane, Norton, Stockton-on-Tees, and Mr. J. Egerton Quested, The Firs, Cheriton, Kent, were elected as Governors, and 89 duly nominated candidates were admitted into the Society as Members.

The EARL OF NORTHBROOK, in moving the adoption of the VETERINARY Committee's Report, said he regretted that he personally had been unable to accompany the deputation to Lord Lee on the question of the importation of foreign cattle. As the matter was of very great importance, it was proposed that the proceedings at the Conference with Lord Lee should be printed and circulated to members of Council, with the report of the meeting that day. Perhaps he might very briefly give a résumé of the principal points in Lord Lee's reply to what Lord Crewe and other members of the deputation had put before him. Lord Lee had said "that he was aware that the permission which had been given last summer for the importation from Canada of a certain number, not exceeding 100, of Friesian cattle, had caused considerable uneasiness—due, very largely, to a misunderstanding of what was proposed. In the first instance, he thought it very improbable, under the very stringent conditions imposed by the Ministry, that anything like the number of cattle for which permission had been given would be procurable, at any rate, not within a considerable period of time." He had also stated "that the permission to import, which was given officially by Lord Ernle last year, could not, in fairness, be withdrawn, and indeed, under the conditions imposed, withdrawal was quite unnecessary." He then went on to say that "the decision of the Ministry to allow the importation of these animals was not only within the letter, but also within the spirit of the Act, on the ground that the circumstances were exceptional and that the animals were of a 'rare and special kind,' to quote Lord Crewe's expression, and that it would be beneficial to the Holstein herd of the country if such animals could be introduced."

With all respect, he (Lord Northbrook) would like to express the strongest disagreement with the interpretation placed upon that particular section of the Act of 1896. (Hear, hear.) The view given by Lord Lee, he had no hesitation in saying, was not the view held by any Minister of

Agriculture until Mr. Runciman created the unfortunate precedent by giving permission for introducing a considerable number of Friesian cattle into this country some five years ago. This was a most unsatisfactory matter. It meant that a Minister of Agriculture had the power, at his own discretion, of giving permission for any number of foreign animals to be brought into this country without giving any previous intimation of his intention, or any opportunity for the stockbreeders of the country to express their views. He felt that that position was fraught with considerable danger to stockbreeders.

Then Lord Lee had pointed out that there was little risk of disease being introduced, as the conditions of quarantine, &c., were very strict, and all these cattle would have to be certified as free from tuberculosis by the Canadian Government before they were brought over here. In conclusion Lord Lee had stated "that no one could contemplate the importation of store cattle into this country under such stringent conditions of quarantine, &c., and in any event the requisite 'exceptional circumstances' could not be urged in the case of store cattle. As already stated, the Government had no intention of admitting store cattle from anywhere, and in no case could such importation take place without fresh legislation."

Mr. CHRISTOPHER MIDDLETON supported what had been said by Lord Northbrook, as he considered Lord Lee's reply eminently unsatisfactory. There was a very strong feeling throughout the country that the Act of 1896 should be amended by the deletion of that clause which gave power to a Minister of Agriculture to import cattle for special purposes. A Bill was now being drafted with this object, under which it would be impossible for such animals to be imported except by an Order in Council, which would have to lie on the table of both Houses of Parliament for a specified period. He thought it might be held that, in view of the Society's Charter, the Council could not co-operate in the promotion of this Bill, but he would urge individual members to ask Members of Parliament, when that Bill was brought forward, to give it their hearty support.

Mr. GREAVES said the Council were aware that they had elected certain members of the Society of Motor Manufacturers and Traders on the Implement Committee, for the purposes of the tractor trials. He might say that the knowledge and experience of those members had been most helpful, and the Committee were very grateful for the assistance given. As manufacturers, they were greatly interested in the facilities to be given to the public for witnessing these trials. One suggestion that had been made was that it might be possible to hold demonstrations after the trials with the view of facilities being given to the public for seeing the working of the machines. That, he thought, was a possible solution, but, as time was getting short, and these things would have to be settled soon, he suggested that the Committee should have power to make all arrangements necessary for these trials and demonstrations.

On the motion of Sir JOHN THOROLD, seconded by Mr. ADEANE, the honorary membership of the Society was conferred on M. Léon Boereboom, the Director of Agricultural Reconstruction in Western Flanders, whose co-operation with the Agricultural Relief of Allies Committee in the distribution of live stock to farmers in the devastated areas of Belgium had been of the greatest assistance to the Committee in carrying out their operations in that country. Sir JOHN THOROLD said that the President of that Fund, the Duke of Portland, was paying a visit to Belgium, and on Saturday next would attend an exhibition at Ypres of the live stock presented by the Committee to Belgium. His Grace had kindly consented to present the diploma to M. Boereboom at the public function to be held in honour of the Duke on that occasion. He was sure that all would sincerely hope that the action of the Society's Agricultural Relief of Allies Committee would be a lasting memento of the sympathy shown by the agriculturists of this country to their brave allies of Belgium.

On a motion from the Chair, the Seal of the Society was ordered to be affixed to the Diploma of Honorary Membership to be presented to M. Boerebooin.

WEDNESDAY, JUNE 2, 1920.

The MARQUIS OF LONDONDERRY, K.G. (Acting-President), in the Chair.

Mr. John Anderson, 199 Piccadilly, W. 1, Mr. A.E. Dean, Pennoyle, Edenbridge, Kent, Lieut.-Comdr. R.F. Eyre, R.N., Lindley Hall, Nuneaton, Mr. George Holt-Thomas, North Dean House, Hughenden, Bucks, The Earl of Londesborough, Blankney, Lincoln, the Marquis of Londonderry, K.G., Londonderry House, Park Lane, W.1, Mr. James McLaren, Junr., Offerton Hall, Sunderland, Mr. John Nelless, Kyo Hall Farm, Greenside, Ryton-on-Tyne, Lieut.-Colonel F. R. Simpson, Hedgefield House, Blaydon-on-Tyne, Mr. John Slater, The Elms, Cheadle, and Miss Zula M. Woodhall, Norton Park, Bredons Norton, near Tewkesbury, were elected as Governors of the Society, and 244 duly nominated candidates were admitted into the Society as Members.

The Report of the FINANCE Committee was received and adopted ; and, on the motion of Mr. ADEANE, it was resolved :

> "That the Secretary be empowered to issue to any duly nominated candidate for membership of the Society, on receipt of the annual subscription, a badge admitting the candidate to the same privileges as a member during the forthcoming Show at Darlington, the formal election of such candidate to be considered by the Council at their next ordinary meeting."

The DUKE OF PORTLAND, as President of the AGRICULTURAL RELIEF OF ALLIES Committee, made a report to the Council with regard to his visit to Belgium last month on the occasion of the Exhibition in the market place at Ypres of live stock given by the Committee for the assistance of farmers who had lost their possessions in the region of Belgium that had been devastated during the war.

The SECRETARY reported that he had just received the following resolution from the National Cattle Breeders' Association :—

> "That the National Cattle Breeders' Association urges the Minister of Agriculture to approach all countries importing stud stock, and to inform them fully of the preventative measures taken to eradicate and prevent the spread of every outbreak of infectious or contagious disease in this country, and further to suggest that in their own interest every possible safeguard would be amply secured if they refused to accept for, say, 3½ months from the date of the eradication of the disease, any animal from within the area included in the infected zone as fixed by the Board on the notification of the outbreak of the disease."

After a discussion, in which Mr. ALFRED MANSELL, Mr. DAVIS BROWN, Col. STANYFORTH, LORD STRACHIE and Mr. HOWARD TAYLOR took part, the further consideration of the matter was postponed.

The SECRETARY reported that the Trustees of the Queen Victoria Gifts Fund had decided to make a grant of £140 to the Royal Agricultural Benevolent Institution for the year 1920, to be distributed as follows :— Three grants of £10 each to male candidates, three grants of £10 each to married couples, and eight grants of £10 each to female candidates.

WEDNESDAY, JUNE 30, 1920.

HELD IN THE DARLINGTON SHOWYARD.

Sir J. B. BOWEN-JONES, Bart. (Trustee), in the Chair.

Mr. LUDDINGTON, as Chairman of the CHEMICAL AND WOBURN Committee, mentioned that the annual visit of the Council to the Woburn

Experimental Farm and Pot Culture Station would take place on July 28, after the Council meeting, which would be held at 10 a.m. on that day. Dr. Voelcker would be glad to receive the names of those intending to be present.

The CHAIRMAN then moved that Mr. Edwin James Powell be elected an Honorary Member of the Society, in recognition of his long and valuable services in the several spheres in which he had worked for upwards of 50 years. Mr. Powell, as they all knew, was not only Secretary of the Shorthorn Society, but also of the Smithfield Club, which embraced so many of the breeds of live stock. Mr. Powell had also been very closely identified with the work of the Royal Agricultural Society and its Shows for many years and he (the Chairman) was sure that all who had had the advantage of knowing Mr. Powell and his work would gladly support the resolution that he be elected an Honorary Member of the Society.

The motion was seconded by Colonel STANYFORTH and unanimously adopted.

The Seal of the Society was ordered to be affixed to the Diploma of Honorary Membership; and it was decided to ask the Acting-President to present it to Mr. Powell at the General Meeting of Governors and Members, to be held that morning.

On the motion of LORD MIDDLETON, seconded by Mr. LUDDINGTON, it was resolved :—

"That the best thanks of the Society are due and are hereby tendered to :—
(1) The officials of the General Post Office for the efficient postal arrangements in connection with the Show.
(2) The Chief Constable of Durham for the efficient police arrangements.
(3) The British Red Cross Society for the efficient ambulance arrangements made by them.
(4) Messrs. Barclay & Co., Ltd., for the efficient services rendered by their officials.
(5) Messrs. Merryweather and Sons, Ltd., for the provision of fire appliances and for the efficient arrangements in connection with the Fire Station in the Showyard.
(6) Messrs. Haward & Sons for decorating and furnishing the Royal Pavilion.
(7) Messrs. Kent & Brydon for providing floral decorations near the Pavilions.
(8) Messrs. Mack & Miln for providing floral decorations near the Main Entrance."

Letters of thanks were also ordered to be sent to various other individuals and firms for assistance kindly rendered and for the loan of articles for the purposes of the Show.

Sir ARTHUR HAZLERIGG having raised the question of the shortage of catalogues on the opening day of the Show, the SECRETARY stated that the number of catalogues available this year at the commencement of the Show was in excess of the number on the first day at Cardiff last year. He explained that when the stock entries closed on May 20 the manuscript for the printers had to be prepared from the forms, and, with the limited time available, it had been absolutely impossible to get more copies before the Show opened. Their printers had as many machines as other firms, and, had it been possible, more copies would have been sent. It had become however, a physical impossibility. Arrangements had been made for a supply of 3,500 catalogues daily after Tuesday; and in view of the great demand, an additional supply of 2,000 copies without advertisements, over and above the 15,000 originally ordered, would be printed and ready for sale on the Saturday.

After discussion, it was decided to refer the matter to the Stock Prizes Committee for consideration.

Proceedings at the General Meeting of Governors and Members,

HELD IN THE

LARGE TENT IN THE SHOWYARD AT DARLINGTON,

WEDNESDAY, JUNE 30, 1920.

The MARQUIS OF LONDONDERRY, K.G. (ACTING-PRESIDENT) IN THE CHAIR.

The ACTING-PRESIDENT, in opening the proceedings, said he was very pleased indeed to preside at that annual meeting; but, while it was a great honour and privilege for him to be there, he would like to say at once how deeply he regretted the fact that their President (H.R.H. the Prince of Wales) had been unable to preside at the show. There was no need, his lordship said, for him to enlighten the meeting as to why His Royal Highness was unable to be present. They knew that he was visiting the Dominions, and they knew also of the highly successful journey he was making amongst their relatives in distant parts of the world. It would be wrong in the circumstances for them to grudge the pleasure they would have experienced in welcoming the Prince of Wales. His Royal Highness would, many years hence he hoped, be in a position in which it would be of the highest importance that he should be acquainted personally with all the great colonial possessions. His lordship then read the following letter he had received from Sir Sidney Greville:—

St. James's Palace, S.W.,
June 23, 1920.

DEAR LORD LONDONDERRY,—I am desired by the Prince of Wales to ask that you will kindly convey to the governors and members at the general meeting in the Darlington Showyard the expression of his pleasure that everything points to a most successful Show, which in numbers of entries appears to be a record one.

It is a matter of great regret that circumstances have prevented His Royal Highness from attending the Show, and, as your President, he wishes me to thank the governors and members of the Society for what they have done to bring about such an excellent result.

I know how great a pleasure it is for the Prince to be associated with the Royal Agricultural Society, and how grateful he feels to you for acting as his deputy in the presidential chair during his enforced absence from England. His Royal Highness wishes me to say how much he hopes that the efforts of the Honorary Director (Sir Gilbert Greenall) and his assistants in organising such a splendid exhibition of live stock, implements, &c., this year will prove of the greatest value to the agriculture of the country.—Yours sincerely,

(Signed) SIDNEY GREVILLE, Controller.

While they regretted the absence of the Prince of Wales, they should congratulate themselves that H.R.H. the Duke of York—(applause)—had been good enough to come and visit the Royal Show. His lordship then made reference to the great interest which had always been evinced in agriculture by the members of the Royal Family. The Duke of York had signified his desire to become a Member of the Society, and his lordship then moved his formal election.

This motion having been carried by acclamation, the Chairman handed to His Royal Highness the Member's badge. (Applause.)

Continuing his remarks, LORD LONDONDERRY said they could all see for themselves exactly what the show was. They saw around them exhibits of implements and machinery, the numbers of which had never been exceeded, and they saw also entries of stock—horses, cattle, pigs and sheep—which had never been surpassed. Consequently, they had every reason to congratulate themselves on the progress which the Royal Agricultural Society had made during the time it had been in existence. It was now twenty-five years since the Society were at Darlington before, and on that occasion they were honoured by the presence of the present King and Queen.

Looking back on what the entries were then and comparing them with the present entries, and remembering that the show now occupied 130 acres, they could realise the extent to which the scope of the show had grown in the last quarter of a century. It would be difficult to overestimate the value which the Society exercised, not only in this country, but abroad, as it was the nucleus of that great stock-breeding policy which extended and radiated throughout the whole world. This country was the reservoir to which the rest of the globe looked for the replenishing of their stock, and it was all-important that we should realise this, and make up our minds that it was a position we were determined to maintain in the future. (Applause.)

There was one name he desired specially to mention: it was that of their Honorary Director, Sir Gilbert Greenall. They all knew the great work that Sir Gilbert had accomplished for agriculture and stock-breeding; no man living had done more. They were deeply indebted to him, not only in this country but all over the world, for the work he did day in and day out and all the year round. (Applause.)

The **Duke of York**, in acknowledging his election as a Member of the Society, said:—"I am greatly pleased to have been able to attend the Royal Show in the year that my brother, the Prince of Wales, has the honour to be President. I wish to take this opportunity of thanking you, Lord Londonderry, and the Council of the Royal Agricultural Society, for making me a Member. The large number of entries and the variety of the exhibits, together with yesterday's record attendance, testify to the success of the show, and to the importance of the agricultural industry in this country. (Cheers.) We cannot afford to let agriculture return to pre-war conditions—(cheers)—when it was starved and neglected. The more food we can produce at home the sooner our credit abroad will be established. (Cheers.) With scientific methods and more business-like conditions, the land must come back to the plough; for grass will not support us. The Royal Agricultural Society does much to keep the importance of the great industry of agriculture before the nation, and I congratulate those responsible for the great success of this year's show. (Cheers.)

Mayor and Corporation Thanked.

Sir **Gilbert Greenall** said he had much pleasure in moving that the best thanks of the Society be tendered to the Mayor and Corporation of Darlington for their cordial reception of the Society. If those present had been in Darlington as much as he had during the past few weeks they would realise what had been done on behalf of the Society by the local authority and their officials. While it might seem invidious to mention names, he wished particularly to refer to Mr. Steavenson, the Town Clerk, and Mr. Winter, the Borough Surveyor. He spoke of them particularly because he had been associated more with them than with any other officials. He could say, however, that everybody associated with the Corporation of Darlington had done everything they possibly could to make the Show the success which it undoubtedly was. (Applause.)

Lieut.-Col. E. W. **Stanyforth**, in seconding, said he remembered the last time the Royal Show was held at Darlington. He could only say that the reception of the Society had never been more cordial than it had been on the present occasion. In this connection he would like specially to mention the spade work done by the late Mayor, Alderman Bates. ("Hear, hear," and applause.)

The **Mayor of Darlington** (Mr. T. Crooks), in acknowledging the vote, said he could assure the Society that from the very moment when the coming of the Royal Show to Darlington was first mentioned the Corporation had co-operated in the spirit which meant to give it most cordial and welcome support. (Cheers.) The Show had undoubtedly brought a great deal of work, but the Town Clerk and their other officials, as well as the members of the Council, were never afraid of work; they were willing to put their shoulders to the wheel when necessary. If the coming of the Royal Show to Darlington had done nothing else, it had taught them the value of the site of Hundens Farm. While some of them had known that particular piece of ground for many years, the Council of the Royal Agricultural Society, with their surveyor and officials, had come along and made them see that it was worth more than they had calculated.

Darlington, continued his Worship, was undoubtedly a fine agricultural centre—one of the finest in the North of England, and probably in the whole of the country. The Town Council had all along laid itself out to cater for the interests of agriculture. They used to pride themselves that they had two industries only—agriculture and railways. They were very proud of the railways, but they had other industries to-day, and were sending bridges and locomotives and parts of great steamships to all parts of the world. He heartily commended to them the words of His Royal Highness the Duke of York, and trusted that in future England would be much less dependent upon food from abroad than she was in pre-war days. The soil of the old country should be able to produce food much more plenteously than it did, and he trusted that the Show would be an incentive to the cultivators of the soil to get the full wealth that was in it. (Applause.)

Thanks to Local Committee.

The Hon. CECIL PARKER said it was his privilege to move "That the best thanks of the Society be tendered to the Darlington Local Committee for their exertions to promote the success of the Show." In 1895 he had had the honour of being Honorary Director of the Show. On that occasion they had had an attendance of one hundred thousand. On the present occasion that number would probably be doubled. He had great pleasure in moving the resolution.

Mr. PERCY CRUTCHLEY seconded the vote, which was heartily accorded.

Mr. W. E. PEASE in thanking the meeting for their resolution, said it had been a pleasure to the members of the Local Committee to work with the splendid officials of the Society. Since the first day Mr. McRow came down there had never been the slightest hitch, and when Sir Gilbert Greenall came on the scene things began to hum.

Thanks to Railways.

Colonel CORNWALLIS moved a vote of thanks to the railway companies for the facilities afforded in connection with the Show. In spite of the restrictions attendant upon Government control, the railway companies, he said, had exceeded their customary efficiency of service, and the Society was specially indebted to the North-Eastern Railway Company, who had not only handled the bulk of the traffic but had built a special dock in order to cope with the unprecedented number of live stock and implements.

The Hon. J. E. CROSS seconded the motion, which was carried unanimously.

New Honorary Member.

The Acting-President stated that at the Council meeting that morning Mr. E. J. Powell, the late secretary of the Shorthorn Society and the secretary of the Smithfield Club, who had done so much good work also for their Society, and who was known to almost every one there, had been elected an Honorary Member of the Society. He was sure that all Members present would endorse the Council's action. (Applause.)

His Lordship then handed to Mr. Powell the Diploma and Badge of Honorary Membership.

Members' Suggestions.

In response to the usual inquiry from the Chair as to whether any Governor or Member had any remarks to make or suggestions to offer, Mr. CORBETT (Shrewsbury) said he would like to bring forward a recommendation that in future when the Society received any invitation from a city or borough to hold the Show, that the inhabitants of such a city or borough be asked if they will provide the accommodation necessary for the Members of the Society and exhibitors from a distance, to prevent them having to travel many miles to and from the Show day after day.

The CHAIRMAN explained that the Society had accepted invitations up to 1925, but promised that Mr. Corbett's suggestion would receive the consideration of the Council.

Thanks to the Chairman.

LORD BLEDISLOE said that in the absence of their beloved, popular and statesmanlike Prince, the Society were fortunate in having so capable a substitute as the Marquis of Londonderry, who was a worthy scion of a great English family which had always been conspicuous for its services to the State. The Society were much indebted to him, and he (Lord Bledisloe) desired to move that the best thanks of the meeting be tendered to Lord Londonderry for his services in the Chair. (Applause.)

The Rev. C. H. BROCKLEBANK seconded the motion, and the vote was unanimously accorded.

LORD LONDONDERRY, responding to the vote of thanks, said it was a source of satisfaction and pleasure that he had been called upon to preside at the Royal Show when it was held in a district in which his family was not unknown. He would like to say how deeply he was indebted to Mr. McRow, their secretary, who had given him no end of assistance, during the short time he had been Acting-President; and, from the local point of view, to Mr. Steavenson for his untiring efforts to bring about the success of the Show.

WEDNESDAY, JULY 28, 1920.

The Hon. CECIL T. PARKER (Trustee) in the Chair.

Mr. John Ashbridge, Manor House, Sneaton, Whitby; Sir Samuel Hordern, Babworth House, Darling Port, Sydney, N.S.W.; Mr. Henry King, Riston Grange, Hull; Lt.-Col. Walter M. Pryor, D.S.O., Weston Park, Stevenage; Mr. W. H. Renwick, Newbiggin, Richmond, Yorks; Mr. Robert Singleton, Layton Lodge Farm, Great Layton, Blackpool; Mr. George E. Sisterton, Sedbury Park, Richmond, Yorks; Mr. G. W. Strode, Bovingdon Lodge, Bovingdon, Herts; Lt.-Col. Harold P. Sykes, Longford Hall, Newport, Salop and Mr. Harold E. Young, Sandgate, Blundellsands, Lancashire were elected as Governors of the Society and 306 duly nominated candidates were admitted into the Society as Members.

Mr. ADEANE, in presenting the Report of the Finance Committee, said he was sure that it would be a matter of great regret to the Council to know that the Darlington Show would not be profitable to the Society, and the result was a very serious one. The "Gate" at Darlington was as good as at Cardiff, but owing to the increased railway charges, cost of labour and material, he feared from what he had heard that the loss would be considerable. The cost of the erection of the showyard at Darlington was £35,000 against £18,000 at Cardiff. What would be the loss on a bad gate if the expenses of the Society remained as at present? It might be anything from ten to twenty thousand pounds. The Council must face the position at once, and see how it could be met. In his opinion, affairs should be so arranged that an average Show would not involve a loss, and the good year should carry the bad year. A few Darlingtons would wipe out the whole of their reserve fund and bring the Society back to the position they were in in 1905, or worse.

He begged, therefore, to move that a Special Committee be constituted to go into the whole question of the finances of the Society and to report thereon.

Before sitting down he would like to say a word with regard to the farm at Woburn. So far as he could make out, there was a loss of something like £1,200 last year on the farm and towards that loss they had been getting an annual contribution of £500 from the Government. From a letter that had been received from the Ministry of Agriculture, however, it appeared to be doubtful whether that grant would be continued. Were they prepared to face the annual loss of £1,200 ?

Mr. LUDDINGTON seconded the motion. With regard to Woburn, it was a great relief to him that the Finance Committee had decided to inquire into the matter. However skilfully an experimental farm was managed in these days there must be a heavy loss, especially on land of the description they had at Woburn, and it was necessary that the matter should be gone into fully. As Chairman of the Chemical and Woburn Committee he would be most happy to give all the assistance he could.

After some discussion, in which Sir HOWARD FRANK, Colonel LANE-FOX, Sir GILBERT GREENALL, Sir WALTER GILBEY, and Colonel STANYFORTH took part, Mr. ADEANE's motion was carried *nem. con.*

On the motion of Col. STANYFORTH, seconded by Mr. H. DENT BROCKLEHURST, it was resolved that the Special Committee consist of Mr. Adeane, Sir Gilbert Greenall, Bart., the Earl of Northbrook, Mr. R. M. Greaves, Mr. Richardson Carr, Mr. Evens, Mr. Ernest Mathews, Mr. Joseph Harris and Mr. William Harrison.

On the motion of Mr. ADEANE, seconded by Sir JOHN THOROLD, it was resolved "That in order to facilitate the winding up of the accounts for the Darlington Show as early as possible, authority be given for the issue during the recess of orders on the Society's Bankers for the payment of accounts connected with the Show."

Sir GILBERT GREENALL introduced a deputation from the City and County of Chester, who attended the meeting in support of an invitation to the Council to hold the Show in that City in 1925. The deputation consisted of Colonel W. Bromley Davenport (Lord-Lieutenant of Cheshire), Sir John M. Frost (Deputy-Mayor of Chester), the Marquis of Crewe, Sir George Dickson, Bart. (Chairman of Cheshire County Council), Mr. Alfred S. Dutton (Sheriff of Chester), Mr. G. P. Miln (Chairman of Local Committee) and Major Basil Kerr (representing the Duke of Westminster).

After Speeches by several members of the deputation, it was unanimously resolved, on the motion of Sir GILBERT GREENALL, seconded by the EARL OF NORTHBROOK: "That the invitation from the City and County of Chester to hold the Show there in 1925 be accepted."

Colonel BROMLEY DAVENPORT having thanked the Council, the deputation withdrew.

Arising out of the Report of the CHEMICAL AND WOBURN Committee, Mr. ADEANE moved :—

> "That power be given to the Special Committee to give notice to terminate the tenancy of the Woburn Farm if they think it financially desirable."

Mr. LUDDINGTON seconded the motion. Personally, he said, he hoped that the Board of Agriculture and the Development Commissioners would take up a different position and give them the same assistance as they had done in the past. So long as they did this, the work could be carried on, and he hoped they would not desert the Society altogether. It was difficult to understand their action in the matter, in view of the good work that had been done at Woburn, and the problems investigated there. He trusted that it might not be necessary to take such a drastic step as that foreshadowed in the resolution.

Mr. ADEANE said he hoped there would be no misunderstanding with regard to the terms of the resolution. This matter would not come before the Council again before a decision was arrived at. He understood that if they did not give notice by Michaelmas, they would have to wait another two years. The resolution was that power be given to the Special Committee to give notice to terminate the tenancy of the farm if they thought it financially desirable before the next meeting.

Mr. CHRISTOPHER MIDDLETON said he sincerely hoped that it would not be necessary to take the drastic step that had been mentioned. In his opinion, it would be a national loss if they had to give up Woburn, which in the past had done valuable work. He deplored the action taken by the Ministry of Agriculture. He did not think that Woburn was having fair play as compared with similar institutions. He thought that the attitude taken up by the Ministry of Agriculture was scarcely fair. Very much larger grants were made to similar institutions over which the Ministry exercised very little control or supervision; but, as regards Woburn, they seemed to have instituted a most inquisitorial manner. He hoped that in the Conference proposed with the Officials of the Ministry it would be possible to get them to adopt a more amicable attitude concerning the Farm, and he still hoped that the Committee might not find it necessary to abandon Woburn.

Mr. LUDDINGTON said he could not quite agree with Mr. ADEANE that the Special Committee should be given power to terminate the tenancy. He thought the whole Council should have a final decision in the matter. The Special Committee could be empowered to give notice so that the matter might be in order, but the whole question must come before the Council.

Mr. BROCKLEHURST believed that at the Woburn Committee meeting the previous day, a deputation had been appointed to meet representatives of the Ministry of Agriculture in September or October. Could not an earlier date be fixed in order that they might know how they stood with regard to the annual grant from the Ministry?

The CHAIRMAN said the question was that this Special Committee have power to give notice to terminate the tenancy of the Woburn Farm, and then to submit the matter to the Council.

The resolution was then adopted.

Sir JOHN THOROLD said that the Committee of Selection had been unanimous in recommending the name of Mr. Greaves to the Council as President for the ensuing year. Mr. Greaves' services to the Society, especially as Chairman of the Implement Committee, were well known to all those present.

Sir GILBERT GREENALL had very great pleasure in supporting the proposal. No man, he said, was more deserving of the honour than Mr. Greaves.

Mr. GREAVES said he felt deeply the very great honour conferred upon him, the reason for which, he confessed, he was at a loss to understand. In electing the Chairman of the Implement Committee, the Council were conferring a great compliment on the Engineering portion of the Society's Members, and he felt sure it would be appreciated as such by all in the Implement and Engineering world. He knew that it was a very critical time in the affairs of the Society, and he should have hesitated to take office had he not known that he could rely upon the support and assistance of his colleagues. His twenty years' experience on the Society's governing body had taught him that the Council and officials had always accorded the President their support and loyalty, and, so strengthened, he felt he might undertake the duties. He could assure them that he would do his best to carry on the great work of the Society during his year of office.

The Hon. Director (Sir GILBERT GREENALL) referred to the arrangement made with the Yorkshire Agricultural Society, under which the Yorkshire Society promised a contribution to the R.A.S.E. in respect of the privileges granted to their members in connection with the Show, and reported that he, with the Secretary, attended a meeting at York on the 17th instant, at which Mr. Hawking, Mr. Jacob Smith and Mr. John Maughan (Secretary) attended to settle the question of the amount to be received by the Royal Agricultural Society in consideration of the privileges above mentioned. It was unanimously decided that the Yorkshire Society's contribution would be £500.

The SECRETARY read a resolution which had been unanimously passed at a meeting of the Darlington Town Council held on the 8th instant :—

> "Referring to the Royal visit, the Worshipful the Mayor stated that he felt sure that it had given the greatest pleasure and satisfaction to the inhabitants of the town, and he proposed, and it is unanimously resolved, that the Council do record its appreciation of the cordial co-operation of the Most Hon. the Marquis of Londonderry, K.G. (Acting-President of the Royal Agricultural Society) and of the Honorary Director (Sir Gilbert Greenall, Bart, C.V.O.), in all the arrangements that were made in connection with the presentation of the Council's address of welcome and the entertainment of His Royal Highness on the Show Ground.
>
> "It is also resolved that the Council do offer its congratulations to the Royal Agricultural Society on the success which attended the holding of their Show in Darlington."

The following letter was read from the Durham County Agricultural Society :—

> "DEAR SIR,—I am instructed by the Council of this Society to convey the best thanks of the President, Council and Members of the Society for the generous way in which the Royal Agricultural Society have dealt with this local Agricultural County Society.
>
> "This, Sir, I can assure you, will help us to carry on, in the future, with a wider outlook, a Society which in a small way is doing a great deal of *good*.—I am, Sir,
>
> "Yours faithfully,
> "(Signed) L. R. THORNTON."
>
> T. MCROW, Esq.

Letters were also read from Wing Commander Louis Greig, conveying the thanks of H.R.H. the Duke of York for the arrangements made in connection with the Royal Visit to the Darlington Show, and from Mr. E. J. Powell, expressing his appreciation of the Honorary Membership conferred upon him.

WEDNESDAY, NOVEMBER 3, 1920.

The Hon. CECIL T. PARKER (Trustee) in the Chair.

Lord Chesham, Latimer, Chesham, Bucks; Mr. Henry Joseph Lynch, 388 Rua São Clemente, Rio de Janeiro, Brazil; Mr. Arthur E. Priestley, Paxton Hill House, St. Neots; Sir John F. Ramsden, Bart., Bulstrode, Gerrard's Cross, Bucks; Sir Arthur M. Sutherland, Thurso House, Newcastle-on-Tyne; Lord Treowen, C.B., C.M.G., Llanarth Court, Raglan, Mon.; and Mr. Falconer L. Wallace, Balcairn, Old Meldrum, Aberdeenshire, were elected as Governors of the Society, and 58 duly nominated candidates were admitted into the Society as Members.

The Report of the SPECIAL Committee on Finance—which, by permission of the Council, was taken next—was presented by Mr. ADEANE. The Report recommended increases in the fees payable for entries in both stock and implement departments and in the charges for admission to the Show. Recommendations were also made as to economies to be effected in the Society's operations apart from the Show, chief of which was the discontinuance of the Experiments carried on at Woburn. Acting on the power delegated to them the Special Committee had, subject to confirmation by the Council, given formal notice to terminate the tenancy of Woburn Farm at Michaelmas, 1921.

In presenting this Report, Mr. ADEANE said the proposals it contained were interdependent. It was the wish of the Committee to put forward their proposals as a whole, and only as a whole, and they asked the Council either to accept the Report or to negative it. They could not accept any amendments which affected the structure of the Report, but they would be quite willing, and it would only be right, to accept for consideration any amendments on matters of detail. He therefore asked to be allowed to present the Report and move its adoption as a whole.

Sir GILBERT GREENALL, who seconded the adoption of the Report, stated that everything in the Show department had been cut down as far as possible; and, as they had to go to the exhibitors and ask for higher entry fees, they could not do that unless they first put their house in order.

Mr. LUDDINGTON proceeded to move that consideration of the Report dealing with the Woburn Farm should be deferred for a month, but the CHAIRMAN ruled that he could not accept this since the Report must be taken as a whole. Mr. ADEANE reiterated that the Special Committee could not accept any amendment which affected the structure of the Report, and pointed out that the matter with regard to Woburn could not be deferred for a month, otherwise the Council would have to continue its tenancy for two years.

Mr. LUDDINGTON then moved that the Report be not received, and this was seconded by Mr. MIDDLETON.

A discussion ensued, in which Mr. SMITH, LORD NORTHBROOK, Sir J. B. BOWEN-JONES, Mr. EVENS, Mr. PATTERSON, Mr. MIDDLETON, LORD POWIS, Sir ARTHUR HAZLERIGG, MR. BROCKLEHURST, Mr. LUDDINGTON, Mr. FALCONER, Colonel WHEELER and Mr. ADEANE took part.

The amendment was put to the meeting and was lost by ten votes to thirty.

The original motion for the adoption of the Report of the Special Committee was then put and carried.

On the motion of Mr. ERNEST MATHEWS, seconded by Mr. LUDDINGTON, it was resolved:—

> "That in the opinion of the Council of the Royal Agricultural Society of England the grant of a Royal Charter to the University College, Reading, raising it to the status of an independent University, would be of advantage to the interests of education and research in agriculture, horticulture and dairying."

Mr. FALCONER said he would like to move that a letter of condolence be sent from that Council to Lady McLaren, on the death of Sir John McLaren, who had been a very old Member of the Society. His was a great personality, and he had done yeoman service during the war. The motion was seconded by Mr. CROSS and carried unanimously.

It was resolved, on the motion of Mr. JOHN EVENS, seconded by Mr. TURNER, that the best thanks of the Society be offered to the Hon. John E. Cross and Mr. Burke for their services as Stewards in carrying out the Tractor Trials recently held at Lincoln. Those gentlemen, Mr. Evens said, had put in ten solid days at the trials, and previously they had been all over England inspecting ground. It was entirely due to their energy and tact that the trials had been so well conducted.

Mr. CROSS regretted very much that Mr. Greaves was not able to be present at the meeting that day. The trials had been carried out, he trusted, to the satisfaction of the Society, and he hoped that valuable results would accrue to agriculture and the motor tractor trade in general. Mr. Burke and himself, as Stewards, had presented a report, and they desired especially to thank the farmers who had provided the land for the trials. He was glad to be able to report that all the land had been ploughed, and those farmers were satisfied with the condition in which it had been left. He would like to refer to the splendid services rendered by Mr Jackson as Superintendent of the trials. Nothing had been too much for him, and his assistance had been invaluable.

On the motion of Mr. CROSS, seconded by Mr. BURKE, the following resolution was passed:—

> "That the best thanks of the Society be conveyed to the Society of Motor Manufacturers and Traders for their kind co-operation in arranging and carrying out the recent trials of agricultural tractors in the neighbourhood of Lincoln. At the same time the Council desire to place on record their appreciation of the valuable services rendered by the individual members of the Society of Motor Manufacturers and Traders, who acted on the Committee appointed to carry out the trials."

The Report of the Council to the Annual General Meeting of Governors and Members, to be held at the Royal Agricultural Hall, Islington, at 2.30 p.m., on Wednesday, December 8, was prepared and ordered to be issued.

Authority was given for the Seal of the Society to be affixed to the agreement with the Corporation of Derby in connection with the Show of next year.

At the close of the Council Meeting, the CHAIRMAN said he had a painful duty to perform, viz., to read a letter from the Secretary to Mr. Adeane, Chairman of the Finance Committee, announcing his resignation.

On the motion of the CHAIRMAN, it was unanimously resolved that the resignation be accepted with regret, and that the Finance Committee be authorised to make the necessary arrangements for the appointment of a successor, and also to settle the question of a pension to the retiring Secretary, who was fully entitled to one after his forty-three years' service to the Society.

WEDNESDAY, DECEMBER 8, 1920.

The MARQUIS OF LONDONDERRY (Acting-President) in the Chair.

At the commencement of the meeting, the Hon. CECIL T. PARKER was called to the Chair, pending the arrival of the Acting-President.

Mr. Edwin F. Ann, West Parkfields, Derby; Sir R. C. Brooke, Bart., Norton Priory, Runcorn; Mr. John C Duffus, Penniwells, Elstree; Mr. A. W. Hickling, Wing Old Hall, Rutland; The Earl of Kimberley, Kimberley House, Wymondham; The Earl of Lisburne, Crosswood, Cardiganshire; Lieut.-Col. W. N. Pilkington, D.S.O., Home Farm, Rainford Hall, St. Helens; Mr. J. W. Wood, Staincross Hall, Barnsley; and Capt. H. Fitz-Herbert Wright, Yeldersley Hall, Ashbourne, were elected as Governors of the Society, and 239 duly nominated candidates were admitted into the Society as Members.

The CHAIRMAN observed that the addition of those names brought the total membership of the Society to over 12,000.

The DUKE OF PORTLAND, as President of the AGRICULTURAL RELIEF OF ALLIES Committee, offered to the Society a bronze bust of H.M. the King of the Belgians, which he (the Duke of Portland) had had the honour of receiving recently from the Provincial Government of Western Flanders. His Grace said that when he had visited the devastated regions of Belgium a very cordial reception was accorded to him and to other members of the Committee, and as a mark of their gratitude the Provincial Council asked him, as the President of the Committee, to accept the bust and an album containing the signatures of all those small farmers in Flanders who had received gifts of stock from the Relief Committee. His Grace trusted that the bust and album would form an interesting permanent memorial of the work the Society had done through the AGRICULTURAL RELIEF OF ALLIES Committee.

The CHAIRMAN gratefully accepted the bust and the album in the name of the Society.

On the motion of Mr. ADEANE, the Report of the FINANCE Committee, with the exception of two paragraphs, which required separate resolutions, was adopted.

[*Lord Londonderry arrived at this stage and took the Chair.*]

In moving the adoption of the Committee's recommendation with reference to the retirement of the Secretary, Mr. ADEANE said that the recommendation was in the following terms:—

> The Committee considered the question of Mr. McRow's resignation, and recommend that the Society do grant Mr McRow a retiring pension of £500 per annum in lieu of the pension or capital sum to which he would have been entitled on retirement or after attaining the age of 65 under the Society's scheme for the superannuation of officials, and that the policy on his life be surrendered and the surrender value be invested by the Trustees of the Superannuation Fund by way of addition to that fund.

MR. ADEANE said the Council would learn with very great regret of the resignation of their old friend, Mr. McRow. (Hear, hear.) He had spent over forty years in the service of the Society, of which fifteen had been in the capacity of Secretary. He first entered the office in the late 'seventies as a junior clerk under Mr. H. M. Jenkins, and steadily advanced to the position of Chief Clerk, which he resigned in 1904 in order to become Secretary of the Royal Agricultural Hall Company. After the resignation of Sir Ernest Clarke he returned to the R.A.S.E. as its Secretary in 1906. The performance of Mr. McRow's duties had been characterised by great courtesy, tact and loyalty, and he had won the regard of all the Members of the Society. The Council regretted the ill-health which was the cause of Mr. McRow's retirement, and hoped that it might soon be restored so that he might enjoy many years of well-earned rest. Mr. McRow carried with him the best wishes of every Member of the Society. (Applause.)

The resolution was carried unanimously.

The SECRETARY said he was gratified by Mr. Adeane's extremely kind remarks, and he also wished to thank the Council most sincerely for the generous arrangement they had made for him in his retirement.

MR. ADEANE said that the remaining paragraph of the report related to the presentation of the accounts of the Darlington Show. It would not be necessary to go into details with regard to the figures, since they had been already considered by the Special Committee lately appointed by the Council. He would, however, remind them that the loss on the Darlington Show was £7,766, and he would point out that the Committee had withheld £2,000 of cheques because there was not money with which to meet them. That was a situation which arose for the first time in his recollection. The Society's liabilities up to the present were:—Loss on the Darlington Show, £7,766; excess expenditure, on the Society's Journal, £1,405; excess expenditure on the tractor trials, £1,148, making a total of £10,319. To meet this, a sum of £3,535 had been utilised out of the Reserve Fund; there were further available reserves of £456, and there was also the contribution set aside to meet possible losses on the Show of £2,500. That gave a total of £6,491 to set against the liability of £10,319, showing a balance on the wrong side of £3,828. He therefore asked the Council to permit him to apply to the bankers for an overdraft up to £4,000 in order that they might pay their way.

MR. MIDWOOD said he could not understand why it should be necessary to withhold £2,000 of cheques when the Society had funds amounting to between sixty and seventy thousand pounds. He was afraid that the Council had grown panicky. There was no doubt that the expenses of the Show were very much heavier than before, and it would seem from the report of the Special Committee that they were about to do some things which might reduce the membership of the Society. They proposed to reduce the subscription to the Royal Veterinary College to £200 and were giving up the subscription of £10 to the Conjoint Board of Scientific Societies. Further, by giving up Woburn they would give up *practice*, and by reducing or abolishing the other subscriptions they would be giving up *science*. He would suggest that the subscription of Members and Governors should be doubled, and he did not think that such a step would be followed by the loss of even 25 per cent. of the Members. Members were still going to receive free entrance to the Show on each day, which was worth 25*s.*; they would still receive the Journal and various other advantages, and he could not help thinking that for all this £1 was too cheap. Farmers were much better able to pay £2 now than 10*s.* a few years ago. Such a step would relieve the Society from the present apparent difficulty, and it would obviate the necessity for raising the entry fees. A big Show was necessary, and the Society could not maintain the supremacy of the Show in the world unless they had a large entry.

MR. FALCONER seconded the proposal to double the subscription, and added that if he was in order he would give notice that at the February meeting of the Council he would ask that that part of the Special Committee's report referring to Woburn should be deleted.

The ACTING-PRESIDENT thought that some notice should have been given of Mr. Midwood's proposal, and he felt bound to rule it out of order. In reply to a question by Mr. Midwood, the ACTING-PRESIDENT said that the matter might certainly be put down for the next Agenda.

Mr. MIDDLETON asked whether in the interval the matter might not be considered by the Special Committee.

Mr. ADEANE said that the Special Committee had presented its report and now ceased to exist. As a matter of fact, this question was very carefully considered by the Special Committee, who came to the conclusion that to raise the subscription would be taking too great a risk.

Mr. MIDDLETON then asked that the FINANCE Committee should consider it.

Mr. HARRISON said the Special Committee came to the conclusion that to raise the Members' subscription would result in the loss of many more than 25 per cent. of the Members. They had to remember that a large number of the Members were not interested altogether in agriculture, and joined the Society when the Show visited their neighbourhood, and they might object to a subscription of £2.

The recommendation regarding the overdraft was then adopted.

The MAYOR OF DERBY (Alderman Laurie) handed to the Acting-President a cheque for £2,000, being a contribution from the Local Committee to the Show Fund, together with the agreement with the Mayor and Corporation of Derby.

In presenting the JOURNAL Committee's Report, Sir JOHN THOROLD expressed the indebtedness of the Society to Mr. R. W. Moffrey for his many years of service as Printing Auditor to the Council. He might add that in securing Mr. G. W. Riley, M.B.E., his successor, they were extremely fortunate.

Mr. LUDDINGTON presented the Report of the Chemical and Woburn Committee, including a statement by that Committee, embodying their dissent from the conclusions come to by the Special Committee regarding the Woburn Experimental Farm. Mr. LUDDINGTON, in presenting this report, said it was a matter of great regret to his Committee that when the Special Committee was appointed to consider the finances of the Society they did not take the WOBURN Committee fully into their confidence, and that they did not submit their report upon Woburn for the remarks and criticisms of the WOBURN Committee. Many sitting on that Committee had been members for a long time and no one knew better than they the nature of the experiments and their cost. It was felt that there might have been a joint consultation, as the result of which alterations might have been made in the conduct of the farm and economies effected, and the object in view might have been attained in a friendly and cordial way, without it being necessary to take such a drastic step as the discontinuance of the farm. He wished especially to emphasise the fact that in their report the Special Committee made no mention of the promise of the grant of £500 a year by the Ministry of Agriculture, and one Member of the Council who had supported the Special Committee had informed him that he should have taken a very different view of the matter had he had any idea of the promised £500.

As Chairman of the Chemical and Woburn Committee he (Mr. Luddington) had seconded the appointment of the Special Committee. He had volunteered to give information, and it was a matter of great disappointment that his Committee was not officially represented on the Special Committee. He would also like to say that the interest in the scientific work of the Council was not entirely confined to the Members of the Society. The CHEMICAL Committee knew, as the result of letters which had appeared in the Press, that the outside world was greatly interested in what was carried on at Woburn, and regretted the abandonment of that work. He had received a letter from Sir Daniel Hall on the subject, which indicated that the abandonment of the farm was also a matter of regret in official circles.

The Woburn Committee fully recognised the serious losses the Society had sustained at the recent Show, but they felt that the Council ought not to lose their heads and act in a panic. If care was taken, certain economies effected, and certain works carried out, they might look forward to a restoration of the old position in the near future and recouping those losses. When that happened and confidence was restored, it would be a matter of lasting regret that the lead which the Society had taken in scientific agricultural experiments for forty-four years had been rashly thrown away and that the proud position which the Society once held had been lost for ever.

Mr. ADEANE said he thought it must be realised that the whole of the Special Committee's report was carefully debated at the last meeting of the Council, was passed by a large majority, and therefore was a *chose jugée*. No one could object to the very courteous manner in which Mr. Luddington had placed the views of the Chemical and Woburn Committee before the Council, and if he (Mr. Luddington) would limit his remarks to asking the Council to receive the statement of the Committee so that it could be placed on record, the Special Committee would have no objection. But if he asked the Council to adopt that statement there would be considerable objection on the part of the Special Committee, for it really amounted to asking the Council to stultify its action of a month ago. In paragraph 3 of the Chemical and Woburn Committee's statement it was asserted that "estimates put forward by the Special Committee are exaggerated and misleading." To that statement he was bound, on behalf of the members of the Special Committee, to take the strongest exception. To put forward "exaggerated and misleading" estimates amounted to misrepresentation. The Special Committee, from that point of view, must be either knaves or fools, but they were neither the one nor the other; they were honest men trying to do their duty by that Council. He demurred altogether to the idea put forward that they were acting in a panic. To grasp the nettle firmly did not mean that they were in a panic, and to deal with a serious question in time was the security of an institution such as that. Although they were looking forward to a big Show and a successful Show at Derby, it must be remembered that they could not have Derbys, Darlingtons and Cardiffs always. He had in his mind the fact that after Derby they were going to Cambridge, and if they had a loss of £7,000 at Darlington, where their receipts in bulk showed an increase of over £6,000 as compared with Cardiff, they might have a loss of anything up to £20,000 at Cambridge, where there was a very small population to draw from. If the Special Committee had been guilty of misrepresentation, they were not fit to hold the positions they did hold on that Council. It was entirely a matter for the Council to decide. The Special Committee adhered to every statement contained in their report.

Sir BOWEN BOWEN-JONES said that in the statement of their position by the Woburn Committee the Special Committee were accused of making exaggerated and misleading statements, and while he did not suppose any Member of the Council would be so dishonest as wilfully to mislead the Council, there did seem to be some perverse peculiarity of their minds. (Laughter.) He wished to show that the statements were misleading. The Special Committee put down as expenses at the farm £235 as the yearly cost of the experiments under the Hills' Bequest, and he asked whether that was not misleading. Then, again, the Special Committee's report said that £450 of Dr. Voelcker's salary should be set down to the management or supervision of the farm, and he asked whether that was not exaggerated. A moderate sum of £150 or £200 was quite enough to cover this expense. As he had pointed out at the last meeting, the illustrious chemist, Dr. Voelcker's father, was allowed £100 extra on his salary for supervision of the Woburn Farm. With all due respect to the Special Committee, he contended that the report on the cost of the Woburn Farm was both exaggerated and misleading.

Mr. OVERMAN, speaking as a farmer, said he sympathised with Mr. Luddington and the Woburn Committee very deeply, but in July they appointed a Committee, consisting of gentlemen whom they all trusted, to consider the position of the Society, and they had put forward certain means of retrenchment. As farmers they must recognise that when passing through a financial crisis the first thing to be done was to cut their garment according to their cloth. He was sorry to see Woburn go, but if they were going to make revenue meet expenses, he, for one, felt that the Committee had done the right thing. He questioned whether the laboratory work to-day was necessary, having regard to the facilities afforded by the County Council; at the same time he did not want to belittle in any way the work done by his friend, Dr. Voelcker.

Mr. HARRISON said there was no doubt that the interest of Members in the work at Woburn was very small indeed. Speaking as representing the agricultural machinery interest, it was his opinion that the exhibitors of agricultural machinery would on the whole willingly accept the increased charges for space in order to help the Society, but, at the same time, the manufacturers would be the first to deprecate any expense on the part of the Society that could properly be avoided, and many of them looked upon Woburn as a kind of financial excrescence that could be very well done away with.

Sir GILBERT GREENALL said he must support what Mr. Adeane, as the Chairman of the Special Committee, had said. His own view was that the adoption of this report would practically constitute a vote of censure on the Special Committee.

Mr. LUDDINGTON interposed to say that the Chemical and Woburn Committee would accept the suggestion of Mr. Adeane that the statement should be *received*. They had no wish to move a vote of censure, and as long as the Committee's statement appeared on the Minutes they would be perfectly satisfied.

Sir GILBERT GREENALL said that in that case he had nothing more to add.

The Council then formally *received* the statement of the Chemical and Woburn Committee with regard to the Woburn Farm and *adopted* the remainder of the report.

On the motion of Mr. MANSELL, seconded by Mr. FALCONER, it was resolved that the Council should formally call the attention of the Ministry of Agriculture to the increasing number of outbreaks of sheep scab and ask them to take drastic measures for its eradication.

The following Standing Committees were appointed for 1921 :—Finance, Journal and Education, Chemical and Woburn, Botanical and Zoological, Veterinary, Stock Prizes, Implement, Showyard Works, Selection, Dairy and Produce, and Special. The present members were (with some exceptions) reappointed to those Committees. The Hon. Cecil T. Parker, Sir Arthur G. Hazlerigg, Bart., and the Hon. John E. Cross were added to the Committee of Selection. Mr. Henry Overman was added to the Veterinary Committee; Mr. A. M. Montgomery to the Stock Prizes Committee; Mr. John Evens to the Implement Committee, and Mr. John T. C. Eadie to the Showyard Works Committee.

Proceedings at the Annual General Meeting of Governors and Members,

HELD AT THE ROYAL AGRICULTURAL HALL, ISLINGTON.

WEDNESDAY, DECEMBER 8, 1920.

H.R.H. THE PRINCE OF WALES, K.G. (PRESIDENT), IN THE CHAIR.

H.R.H. THE PRESIDENT, in opening the proceedings, said :—I am very proud indeed to be present here to-day. I am sorry I was unable to attend the Royal Show at Darlington this summer, but, as you know, I was away in Australia and New Zealand. I had an opportunity there of seeing the splendid way in which they have developed agriculture, and I was present at two very fine shows held at Brisbane and Melbourne. I also had the opportunity of visiting both cattle and sheep stations. The progress of the work of the Society during the past year under the acting Presidency of the Marquis of Londonderry is set out in the report of the Council. It is satisfactory to learn that the number of Governors and Members on the books has reached a figure never before attained, being 453 more than at the end of last year. (Applause.) While this is a good sign and speaks much for the development of the Society, perhaps I may be allowed to express the hope that Members will not cease their efforts to obtain new recruits. As regards the Show held at Darlington this year, it deserves to rank amongst the finest of the seventy-nine annual exhibitions of British live stock and agricultural machinery that have been held by this great national Society. The large attendance showed that this annual event is still regarded with favour by the public, and, had the weather not broken down, there might have been a record. As a matter of fact, my brother who was there has told me all about it. The Society is once more indebted to Sir Gilbert Greenall. I know as well as you the splendid work he has done as Honorary Director of the Show for so many years. (Applause.)

With such a splendid Show, it is disappointing to learn from the accounts that there is a deficit ; but the Council, with commendable promptitude, have caused full investigation to be made into the financial position of the Society. As the result of the Special Committee's recommendations, which the Council have adopted, there is every reason to hope that the Society's income in future will be sufficient, at all events, to meet its expenditure. But it is evident that the carrying on of the Show under the altered conditions that prevail in the country will require the constant attention of the Council.

Next year the Show will be held at Derby. We are indebted to the various Breed Societies and to the Local Committee for liberal contributions to the Prize Fund, which will enable the Society to offer a classification on the customary wide basis for all descriptions of stock.

The Agricultural Relief of Allies Committee, called into being by the Society in 1915, have now almost completed their labours. Thanks are due to all those who have contributed to the fund, and the Committee are to be congratulated on the success which has attended their efforts on behalf of the farmers in the war-stricken areas of the allied countries.

With these few remarks, we will pass on to the first business on the agenda, which is the presentation of the balance sheet. As stated in the report, this appears in Volume 80 of the Journal issued to members this year. The Darlington Show accounts are in your hands.

Adoption of Report.

Sir DOUGLAS NEWTON (Croxton Park, St. Neots) rose with the greatest possible pleasure to move the adoption of the report, which had been circulated and was in the hands of all those present, so that the meeting would not expect him to go into the details of it. He ventured to think that the report was most satisfactory, and bore testimony to the vitality of the Society, which occupied a strong position at the present time. There were many agricultural organisations distributed throughout the country dealing with the different aspects of agriculture, but there was no Society like theirs of a non-party character that existed solely for the development of the great agricultural industry. The financial situation was a matter which had given great concern to some Members of the Society. All Members present would be glad to hear His Royal Highness say that the Special Committee had been promptly appointed to go into the finances of the Society. After all, economic conditions had not been settled even in the last few months, and it would, he thought, have been very exceptional if the Society had not experienced financial difficulties in the present circumstances. In the Eastern Counties they were looking forward to the visit to Cambridge in 1922, when the Society were assured of the warmest welcome.

Dr. R. SHIRRA GIBB (Berwickshire), in seconding, said the report was most satisfactory except for one particular point, on which he thought those present would all agree the Executive of that great Society were not to blame.

The report was then adopted.

Election of President.

Sir HENRY REW moved "That Mr. R. M. Greaves be elected President of the Society, to hold office until the next ensuing annual general meeting." It was, Sir Henry said, entirely unnecessary for him to commend this motion to the acceptance of those present.

The resolution was seconded by Mr. J. C. WINN (Yorkshire), and unanimously passed.

Mr. GREAVES expressed his appreciation of the great honour they had done him. He was not so foolish as to think he had been elected for any merits of his own, but, in selecting as their President the Chairman of the Implement Committee, the meeting was paying a great compliment to those Members of the Society who were connected with the implement and engineering side of agriculture. He felt that every one engaged in the manufacture of mechanical appliances, which to-day formed so large a part in the equipment of the farm, would appreciate the compliment. He knew that it was a critical moment in the history of the Society. Like other institutions, they were faced with the enormous rise in the cost of everything. These problems would entail the exercise of wisdom and untiring care on the part of the Council, who would, he felt sure, do their utmost to make ends meet. He would have hesitated to take office had he not been convinced that the cordial sympathy and loyal support which had always been accorded to the occupant of the Chair would also be extended to him during the next year.

Election of Trustees.

H.R.H. THE PRESIDENT announced that the following twelve Trustees had been nominated by the Council in accordance with the by-laws:—

H.R.H. the Prince of Wales, K.G., York House, St. James's Palace, S.W. 1.
C. Adeane, C.B., Babraham Hall, Cambridge.
The Duke of Bedford, K.G., Woburn Abbey, Bedfordshire.
Sir J. B. Bowen-Jones, Bart., Council House Court, Shrewsbury.
Col. F. S. W. Cornwallis, Linton Park, Maidstone, Kent.
The Earl of Coventry, Croome Court, Severn Stoke, Worcestershire.
The Duke of Devonshire, K.G., Government House, Ottawa, Canada.
Sir Gilbert Greenall, Bart., C.V.O., Walton Hall, Warrington.
Lord Middleton, Birdsall House, Malton, Yorks.
The Earl of Northbrook, Stratton, Micheldever, Hampshire.
The Hon. Cecil T. Parker, The Grove, Corsham, Wiltshire.
Sir John H. Thorold, Bart., Old Hall, Syston, Grantham.

On a show of hands they were declared re-elected as Trustees, to hold office until the next ensuing annual general meeting.

Election of Vice-Presidents.

The Vice-Presidents were elected in a similar manner, their names being :—

C. Coltman-Rogers, Stanage Park, Brampton Bryan.
Percy Crutchley, Sunninghill Lodge, Ascot, Berkshire.
The Earl of Derby, K.G., Knowsley, Prescot, Lancashire.
The Right Hon. Sir Ailwyn E. Fellowes, K.C.V.O., Honingham, Norwich.
R. M. Greaves, Wern, Portmadoc, North Wales.
Ernest Mathews, Little Shardeloes, Amersham, Bucks.
The Duke of Portland, K.G., Welbeck Abbey, Worksop, Notts.
The Earl of Powis, Powis Castle, Welshpool, Mont.
Frederick Reynard, Sunderlandwick, Driffield, Yorkshire.
The Duke of Richmond and Gordon, K.G., Goodwood, Chichester.
Lieut.-Col. E. W. Stanyforth, Kirk Hammerton Hall, York.
The Earl of Yarborough, Brocklesby Park, Lincolnshire.

Election of Auditors.

On the motion of Mr. J. HERBERT TAYLOR, seconded by Mr. J. P. ROBERTS, it was resolved : "That the best thanks of the Society be tendered to Messrs. Jonas M. Webb, Hubert J. Greenwood and Newell P. Squarey for their services as auditors, and that they be elected for the ensuing year."

Elections to the Council.

H.R.H. THE PRESIDENT then reported, in accordance with By-law 87, the names of the following ordinary members of the Council who had been elected to represent the several divisions of the Society included in Group "A," in order that the meeting might take cognisance of their election :—

Northumberland : G. G. Rea, Doddington, Wooler, R.S.O. ; A. H. Ridley, Park End, Wark-on-Tyne.
Yorks (North Riding) : Major Clive Behrens, Swinton Grange, Malton ; C. W. Walker-Tisdale, The Dairy, Northallerton.
Lancashire and Isle of Man : W. Fitzherbert-Brockholes, Claughton Hall, Garstang : William Harrison, Albion Iron Works, Leigh ; Sir John O. S. Thursby, Bart., Ormerod House, Burnley.
Cheshire: Hon. John E. Cross, High Legh, Knutsford ; Capt. W. H. France-Hayhurst, Bostock Hall, Middlewich ; G. Norris Midwood, The Grange. North Rode, Congleton.
Derby : J. T. C. Eadie, Aldershawe, Lichfield.
Northampton : F. H. Thornton, Kingsthorpe Hall, Northampton.
Norfolk : Davis Brown, Marham Hall, Downham Market ; Henry Overman, Weasenham. Swaffham.
Bedford : John Howard Howard, Clapham Park, near Bedford.
Hertford : Richardson Carr. Mill Lawn, Burley, Brockenhurst, Hants.
Middlesex : A. W. Perkin, Greenford Green. Harrow.
Stafford : John Myatt, Lincoln House, Shenstone, Lichfield ; R. G. Patterson, Acton Hill, Stafford.
Worcester : Col. E. Vincent V. Wheeler, Newnham Court, Tenbury.
Monmouth : Col. Edward Curre, Itton Court, Chepstow.
Cornwall : Brooking Trant, Trethawle, Liskeard.
Dorset : Arthur Hiscock, Manor France Farm, Stourpaine, Blandford.
Hampshire and Channel Islands : James Falconer, Northbrook Farm, Micheldever Station ; Capt. Percy W. Seward, Weston, Petersfield.
Scotland : Andrew M. Montgomery, Netherhall, Castle Douglas, N.B.

Members' Remarks.

In response to an inquiry from the Chair as to whether any Governor or Member had any remarks to make or suggestions to offer for the consideration of the Council,

Mr. P. W. ROBSON (Lincoln) said he had been asked by some of his fellow members of the Agricultural Engineers' Association to speak on Clause 9 on page 4 of the report. Substantial concessions in railway rates had been obtained for exhibitors of live stock, and his Association desired him to ask the Society to approach the Minister of Transport with a view to the restoration of the concessions formerly enjoyed by the agricultural engineering industry with regard to the sending of exhibits to agricultural shows.

Mr. S. G. Howard (Kirtling, Camb.) said he was one of the small tenant farmers who were not in a position to exhibit stock at the Society's Show. The report stated that the Experimental Farm at Woburn—which was to be given up—had in the past made valuable contributions to agricultural research. He could not for the life of him see why Woburn should not continue to make such contributions. It seemed to him to be panic economy to scrap Woburn; for those experiments were very useful to the smaller farmers who would rather look to the Society than to their County Council to assist them in such matters as the best manures to use, the best crops to grow, and the best seeds to sow on certain land. He was sure that if tenant farmers felt they were being left out in the cold there might be a serious decrease in the membership. If, however, Woburn had to be given up, he did hope they would take on some other farm and continue the investigations to which the small fry of the Society attached the greatest importance.

Mr. F. W. Garnett (Dalegarth, Windermere) also expressed his regret at the passing of Woburn. He could not but feel that the giving up of the Experimental Farm was a retrograde step.

The Marquis of Londonderry (Acting-President) explained that this matter had been very carefully considered by the Council both at the meeting held that morning and at the previous meeting, and it had been decided that the farm should be discontinued. The question of economy was uppermost in everybody's mind at this moment—not only national economy, but in all institutions similar to theirs and on the part of individuals. It was no use the Society controlling an income if they did not consider their expenditure in relation to that income. The Council, as the representatives of the Members, had gone into this matter very fully, and their action had not been lightly taken. Their only desire was to act in the best interests of that great Society as a whole.

Mr. H. L. Storey (Bailrigg, Lancaster) remarked that very little was said in the report as to how it was proposed to make ends meet in future. Had the Council taken any steps to reduce the expenditure on the fitting up of the showyard? No doubt they had considered it, but he thought that there should have been some reference to it in the report.

Lord Londonderry said it was a fact that there had been a deficit, which they all regretted, on the holding of the show at Darlington. When they really considered the position, the fact was not very surprising. They had had to deal with practically a new state of affairs, for the cost of everything was something it was impossible to estimate. The cost of labour had increased, and was increasing every day, so that it was difficult to make an accurate forecast. That there had been a deficit was a matter for regret but not for pessimism. All present would recognise that the Council had taken the strong course, and that the arrangements made for next year, based on the information obtained at Darlington, would not only enable them to make ends meet, but, he hoped, make a profit on next year's Show.

Mr. W. G. Millar (Bampton, Oxon) asked permission to refer to the question of the railway charges for the conveyance of live stock exhibits to shows. He understood that by the concession which had been granted, fodder sent with the animals was to be conveyed free, but in his own case he had been charged £30 for conveyance of cattle and £17 10*s*. extra for the conveyance of fodder, which had been put in the truck with the animals. If the Ministry of Transport were going to charge like that he could not see that any concession had been made.

Sir Gilbert Greenall explained that the free conveyance of fodder in pre-war days was not part of the concession. It might have been sneaked in—(laughter)—but it was never allowed. When they went as a deputation to the Minister of Transport they did their best and managed to get the authorities to say that they would convey free with the animals provender for consumption *on the journey*. That, however, was a concession they had never had before.

Mr. Davis Brown said he understood that the railways were going to do more after the 1st of January.

Sir Gilbert Greenall: "Things are going to be better after the 1st of January." (Laughter.)

H.R.H. The President stated that all the suggestions put forward would receive the attentive consideration of the Council.

Testimonial to Mr. E. J. Powell.

Sir Gilbert Greenall said that many of those present would doubtless remember that at the general meeting of Members in the Darlington Showyard the Certificate of Honorary Membership of the Society had been presented by the Chairman, Lord Londonderry, to Mr. Powell, the late Secretary of the Shorthorn Society. Since that interesting occasion the Shorthorn Breeders' Club had instituted a testimonial to Mr. Powell, and he thought they would agree that as Mr. Powell was Secretary of the Smithfield Club, and in view of his connection with the Royal Agricultural Society, it would be an appropriate occasion on which to present him with this testimonial, consisting of an illuminated address and a cheque for one thousand guineas from 650 subscribers. He very much regretted that Lord Northbrook, who, as Chairman of the Testimonial Committee, would have introduced this matter to the notice of His Royal Highness at the meeting, was unfortunately confined to his house through illness. The President of the Shorthorn Society, Lord Merthyr, he was happy to say, was present, and had kindly promised to say a few words.

Lord Merthyr, as President for the year of the Shorthorn Society, said it gave him great pleasure to have that opportunity of saying a few words on the occasion of the presentation of the testimonial to their late Secretary, Mr. E. J. Powell. Mr. Powell, as Shorthorn breeders knew, had occupied the position of Secretary of that Society and Editor of Coates's Herd Book for more than thirty years—the best part of the business life of many a man. He thought they would recognise that although many of the great breeders, the founders of the breed, had had their names recorded in history, and handed down to posterity, and successful breeders were well known for their success, there ha been done man who had spent thirty years in Hanover Square doing essential work, and perhaps his name might only be brought forward to members of the Shorthorn Society. In the establishment of the premier breed of pedigree cattle in this country, Mr. Powell had done work of national importance. The idea of the testimonial was initiated by Sir Gilbert Greenall at a meeting of the Shorthorn Breeders' Club in June last. It had then been mentioned that while the intrinsic value of their gift to Mr. Powell might not be great, he would be gratified in seeing the names of those for whom he had worked so long associated with the testimonial. They had been told that their Society had not gone ahead as it should do, and he would take the opportunity of saying that during the war years Mr. Powell's staff had been depleted, and, not only that, but he was given a great deal more work to do. Consequently, he had been called upon to increase speed, and was, in fact, carrying extra weight. They all regretted the resignation of Mr. Powell, as his great accumulation of knowledge, cheery manner, and readiness to take on extra work, had been a great standby for the Society. He had now been made a Life Member of the Shorthorn Society, and had undertaken to help the Council in every way. He (Lord Merthyr) hoped that Mr. Powell might be spared for many years to enjoy the retirement to which he was entitled. (Applause.)

H.R.H. The Prince of Wales, having read the terms of the illuminated address, presented it to Mr. Powell, together with the cheque for one thousand guineas.

Mr. E. J. POWELL, in acknowledging the testimonial, said he felt it a great honour to receive, at the hands of His Royal Highness, the very handsome present they had been good enough to make him. His connection with Shorthorns had covered a great many years, for he had begun with the formation of the Society, and for thirty-three years he had been its Secretary. With the assistance and good feeling of the Council it had been a very happy time for him, and he was glad to be able to leave the Society in its present prosperous position. He was quite sure that under the control of those noblemen and gentlemen who carried on the Society the breed would go forward and the Society increase in prosperity.

Thanks to H.R.H. the President.

THE EARL OF COVENTRY said that was one of the occasions when one welcomed old age, because he thought it was his long period of membership of the Society to which he could attribute the honour of being asked to propose a vote of thanks to His Royal Highness, the retiring President. It was only last week that he was at the Birmingham Show, where he happened to be President for the year, and a gentleman connected with the Press congratulated him on being President, and asked him if he had filled the office before. His lordship had replied that he had been President on a former occasion, but it was such a long time ago that he really could not remember the date. The Press gentleman would not be satisfied, and went to the office to pursue his inquiries. He had returned to his lordship and said: "I find you were President fifty-one years ago." He (Lord Coventry) said he wished for the moment that this gentleman had not been so diligent in his investigation. (Laughter.) He was sure they were all glad to see His Royal Highness that day—(applause)—presiding over the meeting, and no one could have done it better. The Royal Family had always been devoted to agriculture, and he was glad to see His Royal Highness had taken up the pursuit himself with good breeds of cattle and sheep, not only in this country, but also abroad. He understood that the Prince had some excellent cattle on his ranch in Canada. They welcomed him on his return, and thanked him for the excellent work he had done during the past year.

Sir J. B. BOWEN-JONES seconded the motion. As ex-President of the Society he well recollected the visit of His Royal Highness to Cardiff, when he delighted them all by the great interest he evinced in everything in the agricultural exhibition there. He had one fault to find with His Royal Highness, and that was his energy was so indomitable that he (Sir Bowen) had been unable to keep up with him.

The resolution was carried, the Members present giving three hearty cheers.

H.R.H. THE PRINCE OF WALES, in acknowledging the vote of thanks, said: I am afraid I have not done very much work. In fact, I might almost be described as an absentee President, but I want to assure you of the very great interest I take in the work of the Society and in agriculture generally, not only in the old country, but throughout the Empire, I want especially to thank Lord Londonderry for all he has done on my behalf. (Applause.)

AWARDS OF PRIZES AT DARLINGTON,

1920.

ABBREVIATIONS.

I., First Prize. II., Second Prize. III., Third Prize. IV., Fourth Prize. V., Fifth Prize. R. N., Reserve Number. H. C., Highly Commended. C., Commended.

N.B.—The responsibility for the accuracy of the description or pedigree, and for the eligibility to compete of the animals entered in the following classes, rests solely with the Exhibitors.

Unless otherwise stated each Prize Animal in the Classes for Horses, Cattle, Goats, Sheep and Pigs was bred by Exhibitor

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HORSES.

Shires.

No in Catalogue

Class 1.—*Shire Stallions, foaled in* 1919.[1]

[10 entries.]

6 I. (£20.)—SIR BERNARD GREENWELL, BT., Marden Park, Woldingham, Surrey, for Marden Premier, bay, bred by the late Sir Walpole Greenwell, Bt., Marden Park, Woldingham, *s* Champion's Goalkeeper 30236 *d* Marden Donna 15212 *by* Marden Forest King 28534

8 II. (£10.)—JOHN W MEASURES Dunsby Hall, Bourne Lincs for Lincoln Ben, bay, bred by Charles Morris Highfield Hall St Albans, *s* Bengy 33713, *d* Colney Forest Queen 59888 *by* Tatton Friar 21954

10 III. (£5.)—THE DUKE OF WESTMINSTER Eaton Hall Chester, for Eaton Glen Roy, dark brown *s* Halstead Rob Roy 29449, *d* Bidston Beauty 83556 *by* Normoor Statesman 18986

5 R. N.—WILLIAM DUNLOP, Dunure Mains Ayr, for Lincoln Footprint.
H. C.—9 C.—7

Class 2.—*Shire Stallions, foaled in* 1918 [10 entries.]

17 I. (£15, & Champion.[2])—JAMES FORSHAW & SONS Carlton on Trent, Newark, for Foch 36654, brown bred by R J Fox, Sibthorpe, Newark, *s* Abbotts Royal Blood 31147 *d* Shelton Duchess 73902 *by* Blythwood Kingmaker 18534

20 II. (£10.)—ROBERT L MOND Combe Bank Sundridge Sevenoaks Kent, for Sundridge Nulli Secundus, bay, bred by Allan Holm, The Grange Tilton, *s* Babingley Nulli Secundus 26193 *d* Tilton Forest Queen 65180 *by* Samson 34th 20575

13 III (£5.)—WILLIAM DUNLOP Dunure Mains, Ayr for Ballam Blend 36567, bay, bred by Matthew Kirkham & Son The Oaks, Ballam Lytham, *s* Roycroft Forest King 30862, *d* Juliet 74937 *by* Ream Hills Drayman 24549

11 R.N.—WILLIAM CRAWFORD Oakleigh, Higham Kent for Goalkeeper of Kent.
H.C.—19 C.—12 16, 18

Class 3.—*Shire Stallions, foaled in* 1917. [10 entries.]

30 I. (£15, & R. N. for Champion.[2])—THE DUKE OF WESTMINSTER, Eaton Hall, Chester, for Burscough Friar 36359 bay, bred by H & R Ainscough, Burscough, Ormskirk Lancs *s* Claymore 33114 *d* Burscough Abbess *by* Merry Monk 28559

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[1] Prizes given by the Shire Horse Society

[2] Champion Gold Medal, and £5 to the Reserve given by the Shire Horse Society for the best Stallion in Classes 1 to 3 A Prize of £5 is also given by the Shire Horse Society to the Breeder of the Champion Stallion provided the Breeder is a Member of the Shire Horse Society, and the Dam of the animal is registered in the Shire Horse Stud Book

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

22 II. (£10.)—JAMES FORSHAW & SONS, Carlton-on Trent, Newark, for **Carlton Friar Tuck**, brown, bred by F. W. Ibbotson, Langwith, Mansfield; *s.* Friar Tuck 4th 31441, *d.* Barn Flash 65764 *by* Sergeant 6th 16389.

21 III. (£5.)—H. & R. AINSCOUGH, Burscough, Ormskirk, Lancs., for **Burscough Ironclad**, brown; *s.* Claymore 33114, *d.* Burscough Britannia 73512 *by* Admiral Bosco 26955.

29 R.N.—GEORGE WATERHOUSE, The Grange, Bothamsall, Retford, for **Victor's Commander.**

H.C.—25, 26.

Class 4.—*Shire Fillies, foaled in* 1919.[1] [5 entries.]

34 I. (£20.)—ROBERT L. MOND, Combe Bank, Sundridge, Sevenoaks, Kent, for **Princess Childwick of Sundridge**, bay; *s.* Childwick Champion 22215, *d.* Farewell Tolworth 81346 *by* King of Tantridge 24351.

33 II. (£10.)—WILLIAM DUNLOP, *Dunure Mains, Ayr,* for **Pendley Vanity**, bay, bred by J. G. Williams, Pendley Manor, Tring; *s.* Champion's Goalkeeper 30296, *d.* Pendley Duchess 86010 *by* Norbury Menestrel 23543.

32 III. (£5.)—A. H. CLARK & SON, Moulton Eaugate, Spalding, for **Moulton Whitesocks**, bay; *s.* Warton Draughtsman 27895, *d.* Tatton Duchess 82082 *by* Tatton Dray King 23777.

Class 5.—*Shire Fillies, foaled in* 1918. [4 entries.]

36 I. (£15, & Champion.[2])—HIS MAJESTY THE KING, Sandringham, for **Maid Marion 2nd** 99084, brown; *s.* Friar Tuck 4th 31447, *d.* Princess 68248 *by* Resistance 24561.

39 II. (£10.)—OWEN WILLIAMS, Crossways, Cowbridge, Glamorganshire, for **Crossways Forest Maid**, bay, bred by F. Farnsworth & Sons, Shawwell, Cirencester; *s.* Friar Tuck 4th 31441, *d.* Brockhall Primrose 47333 *by* Lockinge Forest King 18867.

37 III. (£5.)—CRAWSHAW & WARBURTON, LTD., Ridings Colliery, Dewsbury, for **Blurton Venture** 90993, bay, bred by W. H. Holucroft, Church Farm, Adderley, Market Drayton; *s.* Marden Forest King 28534, *d.* Lilleshall Lady Redlynch 75088 *by* Redlynch Forest King 23626.

Class 6.—*Shire Fillies, foaled in* 1917. [5 entries.]

42 I. (£15, & R. N. for Champion.[2])—G. R. C. FOSTER, Anstey Hall, Trumpington, Cambridge, for **Lincoln Duchess** 94096, bay, bred by E. T. Rutter, Salmonby, Horncastle, Lincs; *s.* Ashenden King 31165, *d.* Daisy *by* Financier King 20198.

43 II. (£10.)—OWEN WILLIAMS, Crossways, Cowbridge, Glam., for **Edgcote Whitesocks**, 92808, bay, bred by Edgcote Shorthorn Company, Ltd., Edgcote, Banbury; *s* Normanby Jesse 32675, *d.* Horning Whitesocks 71167 *by* Woodreeve 24772.

41 III. (£5.)—W. CRAWFORD, M.R.C.V.S., 155, Woodhouse Lane, Leeds, for **Deepstone Rose** 92538, bay; *s.* Eaton Fenland King 32353, *d.* Old Hough Cornflower 79059 *by* Pendley Forest Prince 29715.

40 R. N.—THE HON. G. BECKETT, M.P., *Kirkdale* Manor, Nawton, S.O., York, for **Kirkdale Queen Bess.**

Class 7.—*Shire Mares, foaled in or after* 1916, *with Foals at foot.* [5 entries.]

45 I. (£15.)—JOSEPH CARSON, Manor House, King's Sutton, Banbury. for **Harlow Rose** 93476, bay, foaled in 1916, bred by H. A. Garton, Hatfield Heath, Essex; *s.* Coleshill Forester 24149, *d.* Princess Rose 79238 *by* Severn Champion 27759. [Foal *by* Crossmoor Prince Forester 33555.]

47 II. (£10.)—GEORGE FLINTHAM, The Grange, Metheringham, Lincoln, for **Normandy Mona** 94695, bay, foaled in 1917, bred by Sir Berkeley Sheffield, Bt., Normanby Park; *s.* Normanby Briar King 32672, *d.* Cippenham Monica 73942 *by* Dowsby Forest King 27253. [Foal *by* Childwick Champion 22215.]

46 III. (£5.)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for **Edgcote Lady Betty** 92806, bay, foaled in 1916, bred by Edgcote Shorthorn Company, Ltd., Edgcote, Banbury; *s.* Childwick Champion 22215, *d.* Blackthorn Betty 73496 *by* Halstead Blue Blood 27397. [Foal *by* Boro' Draughtsman 34567.]

48 R.N.—ERNEST W. HEADINGTON, Cippenham Court, Slough, Bucks, for **Fenny Menestrel Dolly.**

Class 8.—*Shire Mares, foaled in or before* 1915, *with Foals at foot.* [5 entries.]

50 I. (£15.)—A. H. CLARK & SON, Moulton Eaugate, Spalding, for **Moulton Victor's Queen** 82359, bay, foaled in 1914; *s.* Moulton Victor King 28590, *d.* Moulton Lady Grand 36701 *by* Ethelwulf 16667. [Foal *by* Moulton Abbott 35902]

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[1] Prizes given by the Shire Horse Society.

[2] Champion Gold Medal, and £5 to the Reserve, given by the Shire Horse Society for the best Mare or Filly in Classes 4 to 8. A Prize of £5 is also given by the Shire Horse Society to the Breeder of the Champion Mare or Filly, provided the Breeder is a Member of the Shire Horse Society, and the Dam of the animal is registered in the Shire Horse Stud Book.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

51 II. (£10.)—MAJOR DAVID DAVIES, M.P., Broneirion, Llandinam, Mont., for **Gleadthorpe Seclusion** 84986, bay, foaled in 1915, bred by Exors. of Tom Kay, Hatfield House, Cuckney, Mansfield ; *s.* Childwick Champion 22215, *d.* Bardon May Queen 46943 *by* Lockinge Forest King 18867. [Foal *by* Norbury Menestrel 23543.]

54 III. (£5.)—VISCOUNT WIMBORNE, Ashby St. Ledgers, Rugby, for **Billingford Rhapsody** 83865 black, foaled in 1914, bred by R. Hudson, Billingford, Norfolk ; *s.* Babingley Forest King 26992, *d.* Billingford Symphony 65886 *by* Calwich Blend 17226. [Foal *by* Champion's Goalkeeeper 30269.]

Class 9.—*Shire Colt Foals, the produce of Mares entered in Classes* 7 *or* 8. [4 entries.]

56 I. (£10.)—ERNEST W. HEADINGTON, Cippenham Court, Slough, Bucks, for **Cippenham Friar**, bay, foaled March 16 ; *s.* Monks Green Friar 35891, *d.* Fenny Menestrel Dolly 88531 *by* Norbury Menestrel 23543.

58 II. (£5.)—VISCOUNT WIMBORNE, Ashby St. Ledgers, Rugby, for **Goalkeeper's Forest King**, brown, foaled March 28 ; *s* Champion's Goalkeeper 30296, *d.* Billingford Rhapsody 83865 *by* Babingley Forest King 26992.

55 III. (£3.)—MAJOR DAVID DAVIES, M.P., Broneirion, Llandinam, Mont., for bay, foaled May 25 ; *s.* Norbury Menestrel 23543, *d.* Gleadthorpe Seclusion 84986 *by* Childwick Champion 22215

Class 10.—*Shire Filly Foals, the produce of Mares entered in Classes* 7 *or* 8. [4 entries.]

62 I. (£10.)—GEORGE FLINTHAM, The Grange, Metheringham, Lincoln, for bay, foaled March 17 ; *s.* Childwick Champion 22215, *d.* Normanby Mona 94695 *by* Normandy Briar King 32672.

59 II. (£5.)—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for bay, foaled April 30 ; *s.* Crossmoor Prince Forester 33858, *d.* Harlow Rose 93476 *by* Coleshill Forester 24149.

60 III. (£3.)—A. H. CLARK & SON, Moulton Eaugate, Spalding for bay, foaled May 9 ; *s.* Moulton Abbott 35902, *d.* Moulton Victor's Queen 82339 *by* Moulton Victor King 28590.

Class 11.—*Shire Geldings by Registered Sires, foaled in or before* 1917.[1] [3 entries.]

63 I. (£15.)—GILBERT LEES HARDCASTLE, Long Knowle, Prestwich, Manchester, for **Comrade**, dark brown, foaled in 1916, bred by W. T. Cocking, Elmton Grange, Chesterfield ; *s.* Lanes King 30607, *d.* Darfulds Star *by* Bury Blue Blood 17219.

64 II. (£10.)—SAMUEL LEGGATE, Dogdyke, Lincoln, for **Dogdyke Premier**, chestnut, foaled in 1916, bred by J. & J. W. Bee, Sedgebrook, Grantham ; *s* Ratcliffe Premier 29775, *d.* Sedgebrook Buttercup 75886 *by* Southgate Honest Tom 16984.

65 III. (£5.)—EDMUND PARKER, Ledston Mill, Castleford, Yorks, for **Prince**, bay, foaled in 1913, bred by E Stoker, Towton, Tadcaster ; *s.* Castleford Royal 24120.

Clydesdales.[2]

Class 12.—*Clydesdale Stallions, foaled in* 1919. [8 entries.]

69 I. (£15, & R.N. for Champion.[3])—JAMES KILPATRICK, Craigie Mains, Kilmarnock, for **Craigie Insignia**, bay, bred by James Symington, Kersepark, Hollybush ; *s.* Craigie Littigant 19071, *d.* Nell of Kerse 44168 *by* Montrave Mariner 17393.

68 II. (£10.)—JAMES GRAY, Birkenwood, Gargunnock, Kippen Station, for **Vim**, brown ; *s* Botha 19028, *d.* Meta 45325 *by* Apukwa 14567.

66 III. (£5.)—CHARLES AITKENHEAD, Carr House Farm New Seaham, for black, bred by R. J. Ebdon, Elford, Chathill, Northumberland ; *s.* Dunure Footprint 15203, *d.* Lady Mary *by* Scotland's Favourite 16808

72 R.N.—H. E. ROBERTS, Monk Castle, Southwaite, Carlisle, for bay.
H.C.—70. C.—73.

Class 13.—*Clydesdale Stallions, foaled in* 1918. [7 entries.]

79 I. (£15, & Champion.[3])—ANDREW M. MONTGOMERY, Nether Hall, Castle Douglas, for **Fyvie Sensation** 20042, bay, bred by J. & P. Donald, Lethen, Fyvie ; *s.* Hiawatha Again 18765, *d.* Lady Ivo 40779 *by* Dunure Footprint 15203.

74 II. (£10.)—JAMES GRAY, Birkenwood, Gargunnock, Kippen Station, for **Risque**, bay ; *s.* Apukwa 14567, *d.* Molly of Birkenwood 41028 *by* Bonnie Buchlyvie 14032.

76 III. (£5.)—JAMES HAMILTON, Dunduff, Dunure, Ayr, for **Dunure Flowerman** 20007, bay, bred by John Kerr, Barney Mains, Haddington ; *s.* Auchenflower 12007, *d.* Daisy of Drumbreg 39281 *by* Dunure James 13452.

80 R.N.—THOMAS PETCH, Grange Farm, Great Ayton, Yorks., for **Sir Ayton**.

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[1] Prizes given by the Shire Horse Society.

[2] £92 towards these Prizes were given by the Clydesdale Horse Society.

[3] Champion Prize of £10 given by the Clydesdale Horse Society for the best Stallion in Classes 12-15.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 14.—*Clydesdale Stallions, foaled in* 1917. [8 entries.]

86 I. (£15.)—ANDREW M. MONTGOMERY, Nether Hall, Castle Douglas, for **Utility 19763**, bay, bred by W. Rettin, Kennerly, Peterculter, Aberdeenshire; *s.* Auchenflower 12007, *d.* Lady Index 41817 *by* Dunure Index 15609.

88 II. (£10.)—ALBERT WEIGHTMAN, Middle Herrington Farm, Sunderland, for **Herrington Philemore 20062**, black; *s.* Phillipine 18044, *d.* Lady Madge 32925 *by* Marmion 14420.

85 III. (£5.)—ROBERT B. LITTLE, Cumdivock House, Dalston, Carlisle, for **Fyvie Masterpiece 20041**, black, bred by James Durno, Rothiebrisbane, Fyvie; *s.* Kismet 15417, *d.* Chief Darling 32577 *by* Hillhead Chief 10774.

81 R.N.—WILLIAM GRICE, Old Hyton, Bootle, Cumberland, for **Hyton Lothario.**

Class 15.—*Clydesdale Stallions, foaled in or before* 1916. [6 entries.]

89 I. (£15.)—JAMES KILPATRICK, Craigie Mains, Kilmarnock, for **Blackwood 1862**, black, foaled in 1914, bred by J. & H. R. McConachie, Cirsewilloch, Creetown; *s.* Silver Inch 14364, *d.* Cree Merry Maid 22787 *by* Benedict 10315.

91 II. (£10.)—A. B. MATTHEWS, Newton Stewart, for **President Wilson 19521**, brown, foaled in 1916; *s.* Apukwa 14567, *d.* May Day 41523 *by* The Dunure 16839.

90 III. (£5.)—ROBERT B. LITTLE, Cumdivock House, Dalston, Carlisle, for **Scottish Prestige 19556**, dark brown, foaled in 1916, bred by James Durno, Rothiebrisbane, Fyvie; *s.* Balcairns Fortune 17078, *d.* Bess Allandale 32578 *by* Allandale 12418.

Class 16.—*Clydesdale Fillies, foaled in* 1919. [12 entries.]

106 I. (£15.)—ROBERT YOUNG, Parkhill, Polmont, Stirlingshire, for **Perfect Lady**, dark brown; *s.* Royal Favourite 10630, *d.* Parkhall Lady Footprint 44434 *by* Dunure Footprint 15203.

95 II. (£10.)—F. CALVERT BUTLER & F. J. DICKENS, Red Court, Carnforth, for **Farleton Harmony**, bay; *s.* Dunure Footprint 15203, *d.* Dunure Voice 38671 *by* Apukwa 14567.

100 III. (£5.)—STEPHEN MITCHELL, Boquhan, Kippen Station, Stirlingshire, for **Boquhan Electra**, brown; *s.* Apukwa 14567, *d.* Boquhan Heather 46548 *by* Baron of Buchlyvie 11263.

99 IV. (£3.)—STEPHEN MITCHELL, for **Boquhan Delia**, light brown; *s.* Apukwa 14567, *d.* Gem of Boquhan 26937 *by* Baron's Pride 9122.

102 R.N.—JOHN THOMAS OLIPHANT, Grimsdale, Carlisle, for **Duchess of Grimsdale.**
C.—103.

Class 17.—*Clydesdale Fillies, foaled in* 1918. [12 entries.]

109 I. (£15 & Champion[1].)—JAMES GRAY, Birkenwood, Gargunnock, Kippen Station, for **Peace**, brown; *s.* Botha 19026, *d.* Joan 41027 *by* Apukwa 14567.

111 II. (£10.)—J. E. KERR, Harviestoun Castle, Dollar, for **Harviestoun Felicia**, bay; *s.* Dunure Footprint 15203, *d.* Harviestoun Floraline *by* Royal Favourite 10630.

113 III. (£5.)—STEPHEN MITCHELL, Boquhan, Kippen Station, for **Boquhan Elsie**, brown; *s.* Botha 19026, *d.* Boquhan Sheila 43664, *by* Apukwa 14567.

107 R.N.—CHARLES AITKENHEAD, Carr House Farm, New Seaham, for **Willow Queen.**
H.C. 118. C. 117.

Class 18.—*Clydesdale Fillies, foaled in* 1917. [12 entries.]

121 I. (£15.)—JOSEPH HARPER, Rathillet, Cupar, Fife, for **St. Anne**, black, bred by D. Douglas, Balcarmey, Dalley; *s.* Dunure Footprint 15203, *d.* Lady Douglas *by* Revelanta 11876.

126 II. (£10.)—STEPHEN MITCHELL, Boquhan, Kippen Station, for **Boquhan Beryl**, brown; *s.* Dunure Footprint 15203, *d.* Boquhan Sheila 43664 *by* Apukwa 14567.

123 III. (£5.)—F. L. WALLACE, Balcairn, Oldmeldrum, Aberdeenshire, for **Mirabelle**, bay, bred by George Argo, Petty Fyvie; *s.* Dunure Footprint 15203, *d.* Dunure Juanita 35253 *by* Montrave Mac 9955.

130 IV. (£3.)—F. L. WALLACE, for **Princess 2nd of Airieland**, bay, bred by Matthew C. Lush, Airieland, Castle Douglas; *s.* Dunure Footprint 15203, *d.* Vera of Airieland 41360 *by* Baron Kelvin 13931.

125 R.N.—ROBERT MARSHALL, Mains of Kilmarnock, by Alexandria, Dumbartonshire, for **Lochlands Lady Mary.**

Class 19.—*Clydesdale Mares, with Foals at foot.* [6 entries.]

136 I. (£15, & R.N. for Champion.[1])—D. D. MURRAY, The Dene, Seaham Harbour, for **Queen o' the Ring 46008**, black, foaled in 1914, bred by A. M. Simpson, White Cross, East Kilbride; *s.* Dunure Footprint 15203, *d.* Lady Degree 41958 *by* High Degree 14703. [Foal *by* Bonny Buchlyvie 14032.]

132 II. (£10.)—F. CALVERT BUTLER & F. J. DICKENS, Red Court, Carnforth, for **Farleton Essay**, bay, foaled in 1917; *s.* Dunure Footprint 15203, *d.* Dunure Voice 38731 *by* Apukwa 14567. [Foal *by* Ardendale.]

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[1] Champion Prize of £10 given by the Clydesdale Horse Society for the best Mare or Filly in Classes 16-19.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

135 III. (£5.)—JAMES GRAY, Birkenwood, Gargunnock, Kippen Station, for Senga, bay, foaled in 1917; *s* Apukwa 14567, *d.* Molly of Birkenwood 41028 *by* Bonnie Buchlyvie 14032. [Foal *by* Botha 19026.]

131 R.N.—ROBERT BURTON, Ploughlands, Warcop, Penrith, for Lily O'Ploughlands.

Class 20.—*Clydesdale Geldings, by Registered Sires, foaled in or before* 1917. [5 entries.]

140 I. (£15.)—SCOTTISH CO-OPERATIVE WHOLESALE SOCIETY, LTD., 95 Morrison Street, Glasgow, for Willie, black, bred by John Cooper, Muchalls: *s.* Dunedin.

141 II. (£10.)—WILLIAM S. MILLER, Balmanno Castle, Bridge of Earn, for Charlie, bay, foaled in 1916, bred by J. Barrie, Samford Farm, Falkirk; *s.* Kenilworth.

137 III. (£5.)—DAVID ADAMS, Auchencraig, Bonhill Road, Dumbarton, for Renwick, bay, foaled in 1916, bred by R. Renwick, Buchley, Bishopbriggs; *s.* Royal Print 18085, *d.* Buchley Kate 41220 *by* Hiawatha 10067.

138 R.N.—E. & T. GRIFFITHS, Eamont Bridge, Penrith, for Bronze Medallist.
C.—139.

Suffolks.[1]

Class 21.—*Suffolk Stallions, foaled in* 1919. [6 entries.]

145 I. (£15.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for Morston Gold Chance 4983; *s.* Morston Gold Guard 4234, *d.* Smart 7131 *by* Rendlesham Goldsmith 3095.

146 II. (£10.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for Bawdsey Page 4996; *s.* Bawdsey Varlet 4390, *d.* Bawdsey Madam 6583 *by* Cooks Napolian 2933.

142 III. (£5.)—CAPT. RAYMOND J. CATCHPOLE, Darsham Hall, Suffolk, for Darsham Bellboy 4966, bred by S. Howard, Yoxford; *s.* Bellman 4153, *d.* Telltale 6548 *by* Oliver 3227.

144 R. N.—THE MARQUIS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for Hawstead Peacemaker.
C.—143.

Class 22.—*Suffolk Stallions, foaled in* 1918. [10 entries.]

155 I. (£15.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for Sudbourne Foch 4869, bred by Kenneth M. Clark, Sudbourne Hall; *s.* Sudbourne Beau-Brocade 4235, *d.* Sudbourne Becky 8299 *by* Sudbourne Peter 3955.

154 II. (£10.)—THE EARL OF STRADBROKE, Henham Hall, Wangford, Suffolk, for Henham Dreadnought 4991; *s.* Henham Aerolite 4343, *d.* Matchett 3913 *by* Cooks Border Minstrel 2287.

148 III. (£5.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for Godwick Goldstone 4861, bred by G. P. Watkins, Culpho Hall, Ipswich; *s.* Morston Gold Guard 4234, *d.* Crystal 8334 *by* Viking 3741.

153 R. N.—A. CARLYLE SMITH, Sutton Hall, Woodbridge, Suffolk, for Shotley Beau.
H.C.—156. C.—151, 157.

Class 23.—*Suffolk Stallions, foaled in* 1917. [7 entries.]

160 I. (£15.) ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for Morston Golden Seal 4742, bred by Mrs. Cranfield, Burstall, Ipswich; *s.* Morston Gold Guard 4234, *d.* Morston Magpie 8392 *by* Ashmoor Baronet 3942.

164 II. (£10.)—W. WOODGATE, Fairfield, Framlingham, Suffolk, for Discovery 4676, bred by Webb & Son (Combs), Ltd., Combs, Stowmarket; *s.* Angus 4435. *d.* Deborah 6280 *by* Bentley War Cry 3028.

162 III. (£5.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for Sudbourne K 4692, bred by Kenneth M. Clark, Sudbourne Hall; *s.* Sudbourne Beauchief 4215, *d.* Sudbourne Tilley 6662 *by* Sudbourne Arabi 3287.

159 R. N.—THE MARQUIS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for Easton Sheik.

Class 24.—*Suffolk Stallions, foaled in or before* 1916. [9 entries].

170 (£15, & Champion.[2])—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for Morston Connaught 4590, foaled in 1914, bred by W. H. Allen, Hawkstead Hall, Ipswich; *s.* Decider 4431, *d.* Darby 5661 *by* Warrior 2898.

173 II. (£10, & R. N. for Champion.[2])—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for Sudbourne Beau Brocade 4235, foaled in 1913, bred by Kenneth M. Clark, Sudbourne Hall; *s.* Sudbourne Beau-monde 3598, *d.* Sudbourne Tilley 6662 *by* Sudbourne Arabi 3287.

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[1] £110 towards these Prizes were given by the Suffolk Horse Society.

[2] The "Coronation" Silver Challenge Cup, value £50, given for annual competition by the Suffolk Horse Society for the best Stallion in Classes 21-24.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

168 III. (£5.)—THE MARQUIS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for **Sudbourne Artemus** 4573, foaled in 1916, bred by Kenneth M. Clark, Sudbourne Hall, Orford, Suffolk; *s.* Sudbourne Arabi 3287, *d* Sudbourne Queen of Hearts 5507 *by* Sudbourne Brownie 2886.

165 R. N.—COLCHESTER AND DISTRICT HEAVY HORSE SOCIETY, White Hall, Thorpe-le-Soken, Essex, for **Friston Khedive.**
H.C.—169. C.—166.

Class 25.—*Suffolk Fillies, foaled in* 1919. [6 entries.]

178 I. (£15.)—A. CARLYLE SMITH, Sutton Hall, Woodbridge, Suffolk, for **Ashmoor Bessie** 10367; *s.* Sudbourne Arabi 3309, *d.* Ashmoor Belle *by* Taylor's Majestic 3327.

176 II. (£10.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for **Morston Gold Gleam** 10371; *s* Morston Gold Guard 4234, *d.* Morston Faith 7505 *by* Rendlesham Goldsmith 3095.

177 III. (£5.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for **Bawdsey Scotia** 10337; *s* Earl Gray 4219, *d.* Cliff Scott 6237 *by* Bawdsey Harvester 3076.

179 R. N.—A. CARLYLE SMITH, for **Ashmoor Princess.**

Class 26.—*Suffolk Fillies, foaled in* 1918. [10 entries.]

185 I. (£15.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for **Morston Denise** 9446; *s* Morston Gold Guard 4234, *d.* Smart 7131 *by* Rendlesham Goldsmith 3095.

183 II. (£10.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Mignonette** 9726, bred by E. H. Williams, Alderton, Woodbridge; *s.* Sudbourne Arabi 3309, *d.* Merry Thought 6941 *by* Bawdsey Harvester 3076.

187 III. (£5.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for **Bawdsey Queen** 9813; *s* Bawdsey Hay 4188, *d.* Bawdsey Chieftainess 7453 *by* Bawdsey Laddie 3037.

188 R. N.—STANLEY WARTH, Hintlesham, Ipswich, for **Sprite.**

Class 27.—*Suffolk Fillies, foaled in* 1917. [5 entries.]

191 I. (£15.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for **Bawdsey Hayseed** 9496; *s.* Bawdsey Hay 4188, *d.* Cliff Blossom 6180 *by* Boulge Conqueror 2667.

192 II. (£10.)—SIR CUTHBERT QUILTER, BT., for **Bawdsey Maid Marion** 9508; *s.* Bawdsey Hay 4188, *d.* Bawdsey Mary 4910 *by* Prince Wedgewood 2364.

194 III. (£5.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Ashmoor Bellona** 9448, bred by A. Carlyle Smith, Sutton Hall, Woodbridge; *s* Sudbourne Arabi 3309, *d* Ashmoor Belle *by* Majestic 3327.

193 R. N.—THE EARL OF STRADBROKE, Henham Hall, Wangford, Suffolk, for **Henham Caroline.**

Class 28.—*Suffolk Mares, with Foals at foot.* [6 entries.]

196 I. (£15.)—SIR CUTHBERT QUILTER, BT., Bawdsey Manor, Woodbridge, Suffolk, for **Bawdsey Juno** 8911, foaled in 1916; *s.* Bawdsey Harvest King 3879, *d.* Sutton Venus 509 *by* Hewitts Mars 2134. [Foal *by* Bawdsey Varlet 4390.]

200 II. (£10.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Sudbourne Moonlight** 8621, foaled in 1915, bred by Kenneth M. Clark, Sudbourne Hall; *s.* Sudbourne Peter 3955, *d.* Sudbourne Twilight 7219 *by* Sudbourne Arabi 3287. [Foal *by* Sudbourne Beau Brocade 4235.]

197 III. (£5.)—A. CARLYLE SMITH, Sutton Hall, Woodbridge, Suffolk, for **Ashmoor Anemone** 8963, foaled in 1916; *s.* Sudbourne Arabi 3309, *d.* Violet 5082 *by* Cooks Ironside 2759. [Foal *by* Bawdsey Hay 4188.]

198 R. N.—JOSEPH WATSON, for **Sudbourne Armada.**
H. C.—195.

Class 29.—*Suffolk Mares, Barren, foaled before* 1917. [4 entries.]

201 I. (£15.)—CAPT. RAYMOND J. CATCHPOLE, Darsham Hall, Suffolk, for **Darsham Duchess** 8906, foaled in 1916; *s.* Darsham Sheik 4139, *d.* Darsham Princess 7590 *by* Border Menestrel 2287.

204 II. (£10.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Bawdsey Cleopatra** 8638, foaled in 1915, bred by Sir Cuthbert Quilter, Bt., Bawdsey Manor, Woodbridge; *s* Sudbourne Arabi 3287, *d.* Bawdsey Empress 7017 *by* Bawdsey Harvester 3076.

202 III. (£5.)—ARTHUR T. PRATT, Morston Hall, Trimley, Ipswich, for **Morston Millicent** 8942, foaled in 1916; *s.* Morston Gold Guard 4234, *d.* Bawdsey Sweet Princess 565 *by* Cooks Napolian 2933.

203 R. N.—STANLEY WARTH, Hintlesham, Ipswich, for **Hintlesham Dorothy.**

Class 30.—*Suffolk Foals, the produce of Mares in Class* 28. [5 entries.]

208 I. (£10.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **filly**, foaled March 16; *s.* Sudbourne Beau Brocade 4235, *d.* Sudbourne Armada 8519 *by* **Sudbourne Peter 3955.**

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

207 II. (£5.)—A. CARLYLE SMITH, Sutton Hall, Woodbridge, Suffolk, for **Ashmoor Aconite**, filly, foaled March 10; *s.* Bawdsey Hay 4188, *d.* Ashmoor Anemone 8913 *by* Sudbourne Arab 3309.

205 III (£3.)—E. R DEBENHAM, Bladen Dairy Farms, Aff Piddle, Dorset, for colt, foaled April 15; *s.* Sudbourne Pilot 4411, *d.* Psyche 7695 *by* Rendlesham Goldsmith 3095.

209 R. N.—JOSEPH WATSON, for filly, foaled April 12.

Percherons.[1]

Class 31.—*Percheron Stallions, of any age,* 16·2 *hands and over.* [5 entries.]

211 I. (£20, & Champion.[2])—HENRY OVERMAN, Kipton House, Weasenham, Swaffham, for **Misanthrope 5**, grey, foaled in 1912, bred by M. Bourlier, St. Martin d'Ecublier Laigh, Montagne l'Orne, France; *s.* Dognet *ex* Sapeux 60641, *d.* Dantone 60322 *by* Rival 5065.

210 II. (£10, & R. N. for Champion.[2])—HENRY OVERMAN, Brampton Ash, Market Harboro', for **Lagor 1**, grey, foaled in 1911, bred by M. Chapelle, Origny *ex* Roux, Orne, France; *s.* Huchoir 77760, *d.* Gognette 87589 *by* Ameiae.

213 III. (£5.)—LORD STALBRIDGE, Motcombe House, Shaftesbury, for **Noel 8**, grey, foaled in 1913, bred by M. Pelletier, Nogent-le-Rotron, France; *s.* Jeudi 85571, *d.* Bertine 57833 *by* Egyptian 43775.

212 R. N.—ROBERT E. PARKER, Easton, Norwich, for **Newport 20**.
H.C.—214.

Class 32.—*Percheron Stallions, of any age, under* 16·2 *hands.* [9 entries.]

219 I. (£20.)—THOMAS COOK, Hobland House, Bradwell, Great Yarmouth, for **Perfection 46**, grey, foaled in 1917, bred by George Lane, Calgary, Alberta; *s.* Halifax 75867, *d.* Esmeralda 2103 *by* Epatant 63258.

223 II. (£10.)—ROBERT E. PARKER, Easton, Norwich, for **Paragon 30**, black, foaled in 1917, bred by George Lane, Calgary, Alberta; *s.* Halifax 75867, *d.* Alberta 580 *by* Americain 63422.

218 III. (£5.)—MRS. T. R. COLVILLE, Maer Hall, Newcastle, Staffs., for **Ortho 22**, iron grey, foaled in 1914, bred in France; *s.* Kontemporain 91579, *d.* Kathema 93913 *by* Grevy 71373.

216 R. N.—LIEUT.-COL. SIR MERRIK BURRELL, BT., C.B.E., Knepp Castle, West Grinstead, for **Omer**.
H.C.—215. C.—220.

Class 33.—*Percheron Mares, with Foals at foot.* [7 entries.]

228 I. (£20.)—HENRY OVERMAN, Kipton House, Weasenham, Swaffham, for **Niobe 26**, grey, foaled in 1913, bred by M. Perriot La Rouce, Masle Cheels-Haisne, Montagne, France; *s.* Jean Bart 86379, *d.* Imposèe 80406 *by* Auctionnaire 64675. [Foal *by* Ombrien 12415.]

225 II. (£10.)—MRS. ROBERT EMMET, 66, Grosvenor Street, London, W., for **Malaria 10**, grey, foaled in 1912, bred by M. Chartier, Aprées, Mortagne, France; *s.* Inegal 79874, *d.* Jaseuse 85995 *by* Fernand 65262. [Foal *by* Nonius 4.]

224 III. (£5.)—LIEUT.-COL. SIR MERRIK R. BURRELL, BT., C.B.E., Knepp Castle, West Grinstead, for **Palombe 29**, grey, foaled in 1915, bred in France; *s.* Irradie 83254, *d.* Mettree 62572 *by* Valory 58112. [Foal *by* Noel 8.]

230 R.N.—BRIG.-GEN. C. R. P. WINSER, Dene House, Charlbury, Oxon, and COL. A. DUGDALE, Kitebrook, Moreton-in-Marsh, for **Quonjointe**.
H.C.—226, 227.

Class 34.—*Percheron Mares, Barren or Maiden, of any age.* [13 entries.]

233 I. (£20.)—MRS. ROBERT EMMET, 66 Grosvenor Street, London, W. for **Messaline 211**, grey, foaled in 1912, bred by M. Demange. Blavette, Mortagne, France; *s.* Douvreur *ex* Couvreur 58335, *d.* Paquerette 87642 *by* Voltigeur 44388.

232 II. (£10.)—THOMAS COOK, Hobland House, Bradwell, Great Yarmouth, for **Marrillon 59**, grey, foaled in 1912, bred in France; *s.* Ermite 44360, *d.* Plaquette 41001 *by* Etendart 32198.

241 III. (£5.)—ROBERT E. PARKER, Easton, Norwich, for **Nettie 73**, grey, foaled in 1915, bred by George Lane, Calgary, Alberta; *s.* Halifax 75867, *d.* Ginguette 72700 *by* Tiratoi 57125.

235 R. N.—MRS. ROBERT EMMET, 66 Grosvenor Street, London, W., for **Nemesis 203**, grey, foaled in 1913, bred by M. Bruneau, Chatelet, St. Calais, France; *s.* Javelot 85339, *d.* Baronne 54305 *by* Tertois 42511.
H. C.—236.

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[1] £70 towards these Prizes were given by the British Percheron Horse Society.

[2] Challenge Cup given by the British Percheron Horse Society for the best Percheron Stallion in Classes 31 and 32.

[Unless otherwise stated each prize animal named below was "bred by exhibitor."]

Class 35.—*Percheron Foals, produce of Mares in Class* 33. [7 entries.]

246 I. (£15.)—**HENRY OVERMAN**, Kipton House, Weasenham, Swaffham, for grey colt, foaled May 2, *s* Ombrien 1415 *d* Niobe 26 *by* Jean Bart 86379.

245 II (£10.)—**MRS ROBERT EMMET** 66 Grosvenor Street, London, for **Greyling Unieme 238** grey filly, foaled April 23, *s* Nonius 4, *d.* Malaria 10 *by* Inegal 79874

244 III. (£5.)—**LT-COL SIR MERRIK R BURRELL, BT, C.B E**, Knepp Castle, West Grinstead, for **Knepp Christmas**

Hunters.[1]

Class 36.—*Hunter Colts or Geldings, foaled in* 1919. [4 entries.]

252 I (£15.)—**M A. BULLOWS**, Edgbaston Riding School, Barlow Road, Edgbaston, Birmingham for **Stort**, bay colt bred by William Vizard, Hayesden, Tonbridge, Kent *s* Stortford 145 *d* Winkie 4543 *by* Hanover Square.

251 II. (£10.)—**MAJOR CLIVE BEHRENS** Swinton Grange, Malton Yorks for **Hartshorn**, brown or bay gelding; *s* Crathorne (vol 18, p 854, G S B), *d* Heather 3rd 4106 *by* Scotch Sign.

254 III. (£5.)—**MOFFAT S. THOMSON**. Spotsmain, Kelso, Roxburghshire, for **Glad Rags**. chestnut colt, *s* Jovial, *d* Pyjamas 5320 *by* Pantomime.

Class 37.—*Hunter Geldings, foaled in* 1918. [11 entries]

261 I. (£15.)—**THE DUCHESS OF NEWCASTLE**, Clumber Park, Worksop, Notts, for **Repose**, chestnut; *s* The Chair, *d.* Maria *by* Red Kangaroo.

255 II (£10.)—**MAJOR CLIVE BEHRENS**, Swinton Grange Malton, Yorks, for **Whitethorn**, chestnut; *s* Crathorne (vol 18, p 854, G S B) *d* Whinflower 3801 *by* The Hero (vol 18, p 85, G S.B)

265 III. (£5.)—**THOMAS & HENRY WARD**, Pinchinthorpe, Guisborough, Yorks., for **Comrade**, brown: *s* Cavour, *d* Ladylike *by* Markham.

258 IV. (£3.)—**REX HOWKINS** Clifton Keynes, Newport Pagnell, Bucks for **Coalition** (Supp. No. 488), chestnut, bred by Major J. L Nickisson, Hinton Manor, Swindon; *s* Political, *d* Sister Anne 3723 *by* Pantomime

259 **R.N.**—**COL. JEROME**, Bilton Hall, York, for **Foch**.
C.—256, 263

Class 38.—*Hunter Geldings, foaled in* 1917. [11 entries.]

276 I. (£15.)—**FRANK B. WILKINSON**. Cavendish Lodge, Edwinstowe, Newark, for **Joy**, chestnut, bred by W. A Lockwood, Mount Pleasant, Sheriff Hutton: *s.* Jovial.

266 II. (£10.)—**W COCHRAN-CARR**, Lower Condercum, Newcastle-on-Tyne, for **Red Raider** (Supp. No 447), chestnut; *s.* Denis Richard, *d* Red Gauntlet 5738 *by* Red Sahib (75)

275 III. (£5.)—**THOMAS & HENRY WARD**, Pinchinthorpe, Guisborough, Yorks, for **Lealholm**, bay bred by T Codling. Lealholm; *s* Cavour.

267 IV. (£3.) **SIR ARTHUR J DORMAN, K B E**, Grey Towers, Nunthorpe, Yorks., for **Moorside 2nd** (Supp No. 457) brown, *s.* Blacksmith 192, *d* Pinafore 2nd 5465 *by* Dromonby

269 **R N**—**CAPT W. P. JEFFCOCK**, Cwmcarvan Court, Monmouth, for **Chevy Chase**.
C.—265, 271, 274.

Class 39.—*Hunter Fillies, foaled in* 1919. [7 entries.]

282 I. (£15.)—**MAJOR J. L. NICKISSON**, Hinton Manor, Swindon, for **Aigrette 5645**, chestnut, *s* Aigion, *d* Sister Anne 3723 *by* Pantomime

280 II. (£10.) **GEORGE DICKINSON**, Cark Mills, Cark-in-Cartmel, Lancs., for **Cark Silver Birch**, bay, bred by Mr. Kitchin, Beartham; *s* Silver Grill, *d* Beechurst

279 III (£5.)—**MAJOR DAVID DAVIES, M.P**, Broneirion, Llandinam, Mont, for **Gwyneth**, chestnut; *s* Ballinasloe 84, *d* Lottery.

278 **R. N.**—**MAJOR CLIVE BEHRENS**, Swinton Grange, Malton, Yorks, for **Winnifred**.

Class 40.—*Hunter Fillies, foaled in* 1918. [8 entries.]

256 I. (£15, & Champion [2])—**GEORGE DICKINSON**, Cark Mills, Cark-in-Cartmel Lancs, for **Cark Silver Pheasant 5725**, chestnut; *s* Silver Grill, *d.* Cark Columbine *by* Underbred

291 II. (£10, & **R.N. for Champion.** [2])—**MOFFAT S THOMSON**, Spotsmain, Kelso, Roxburghshire, for **Flannelette**, chestnut; *s.* Hunty Gowk 186, *d* Pyjamas 5320 *by* Pantomime

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[1] £30 towards these Prizes were given by the Hunters' Improvement and National Light Horse Breeding Society.

[2] Champion Gold Medal given by the Hunters' Improvement and National Light Horse Breeding Society for the best Filly not exceeding three years old in Classes 39-41, which must be registered in the Hunter Stud Book, or the entry tendered within a month of the Award.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor"]

285 III. (£5.)—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for **Heroine 2nd** 5701, bay; *s.* Crathorne (vol 20, p. 445, G S B.), *d.* Heather 3rd 4106 *by* Scotch Sign.

284 R. N.—L. H. BARKER, The Farm, Coatham, Redcar, Yorks., for **Cynthia.**
H. C.—290.

Class 41.—*Hunter Fillies, foaled in* 1917. [7 entries.]

295 I. (£15.)—GEORGE DICKINSON, Cark Mills, Cark-in-Cartmel, Lancs, for **Cark Victory**, bay brown; *s.* Soft Answer. *d* Cark Columbine *by* Underbred.

296 II. (£10.)—HAROLD GRAINGER, Boston Spa, Yorks. for **Mercury**, grey; *s.* Merry Fox, *d.* Quicksilver *by* The Dempster.

294 III. (£5.)—W. G. CLARKE, Debden Hall, Loughton, Essex. for **Viewfinder 5613**, chestnut, bred by the late W. R. Clarke, Debden Hall, Loughton, Essex; *s.* Explorer, *d.* Flash 2nd 3956.

Class 42.—*Hunter Mares (Novice), foaled in or after* 1912, *with Foals at foot, up to from* 12 *to* 14 *stone.* [5 entries.]

300 I. (£15.)—SIR ARTHUR J. DORMAN, K B E, Grey Towers, Nunthorpe Yorks, for **Swift** 5003, bay, foaled in 1914; *s* Tennis Ball (vol. 21), *d* Lady Bird 9th 4896. [Foal *by* Ednam.]

304 II. (£10.)—THOMAS & HENRY WARD, Pinchinthorpe, Guisborough, Yorks, for **Princess** chestnut, foaled in 1913, bred by Robert Ward, Kopwick. [Foal *by* Ednam.]

Class 43.—*Hunter Mares (Novice), foaled in or after* 1912, *with Foals at foot. up to more than* 14 *stone.* [1 entry.]

305 I. (£15.)—WILLIAM H. SHIERS, Needwood House, Burton-on-Trent, for **Clematis** 5764, bay, foaled in 1912, bred by George Marton, Salton Manor Sinnington, Yorks; *s.* Denis Richard, *d.* Pine Apple *by* Peppinster. [Foal *by* Modubeagh].

Class 44.—*Hunter Mares with Foals at foot, up to from* 12 *to* 14 *stone.*[1] [10 entries.]

299 I. (£15.)—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for **Heather 3rd**, 4106, brown, foaled in 1910; *s.* Scotch Sign *d.* Whinflower 3801 *by* The Hero. [Foal *by* Fealsham.]

312 II. (£10.)—LORD MIDDLETON, Birdsall, Malton, Yorks, for **Sceptre** 3703, brown, foaled in 1909; *s.* Ollerton (vol. 20, p. 182), *d.* Scornful 1208 (vol. 4) *by* Gordon. [Foal *by* Sir Harry (vol. 20, p 791)].

313 III. (£5.)—WILLIAM H. SHIERS, Needwood House, Burton-on-Trent, for **Princess Mary** 5765, brown, foaled in 1912, bred by Marcus Kendall, Ness Hall, Nunnington, York; *s.* Selby Royal, *d.* Wild Mint *by* Peppermint. [Foal *by* Peter Pan.]

306 R.N.—ERNEST BRADLEY, Newton Grange, Great Ayton, for **Dolly**, chestnut, foaled in 1908; *s.* Burnockwater. [Foal *by* Ednam].
H.C.—307. C.—310.

Class 45.—*Hunter Mares with Foals at foot, up to more than* 14 *stone.*[1] [2 entries.]

316 I. (£15, & Champion.[2])—GEOFF KENYON, Plainville, Haxby, York, for **Beauty Darling**, grey, foaled in 1910; *s.* Butterscotch. [Foal *by* Primary].

315 II (£10, & R.N. for Champion.[2])—T. A HUDSON, Rudding House, Pannal, Harrogate, for **Miss Walton**, bay, aged. [Foal *by* Cavour.]

Class 46.—*Hunter Colt Foals, the produce of Mares in Classes* 42 *to* 45. [6 entries.]

321 I. (£10.)—THOMAS & HENRY WARD, Pinchinthorpe, Guisborough, Yorks., for chestnut, foaled May 6; *s.* Ednam, *d.* Princess.

317 II. (£5.)—ERNEST BRADLEY, Newton Grange, Great Ayton, Yorks., for chestnut, foaled May 28; *s.* Ednam, *d.* Dolly *by* Burnockwater.

320 III. (£3.)—LORD MIDDLETON, Birdsall, Malton, Yorks, for chestnut foaled May 29; *s.* Sir Harry (vol. 20, p. 791), *d.* Sceptre 3708 *by* Ollerton (vol 20, p. 182).

Class 47.—*Hunter Filly Foals, the produce of Mares in Classes* 42 *to* 45. [11 entries.]

327 I. (£10.)—GEOFF KENYON, Plainville, Haxby, York, for grey, foaled April 2; *s.* Primary, *d.* Beauty Darling *by* Butterscotch.

323 I. (£5.)—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks, for **Halcyone**, chestnut, foaled April 16; *s.* Fealsham, *d* Heather 3rd 41 6 *by* Scotch Sign.

326 III. (£3.)—T. A. HUDSON, Rudding House, Pannal, Harrogate, for bay, foaled April 29; *s.* Cavour, *d.* Miss Walton.

325 R. N.—SIR ARTHUR J. DORMAN, K B E, Grey Towers, Nunthorpe, Yorks, for bay.

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[1] Prizes given by the Hunters' Improvement and National Light Horse Breeding Society.

[2] Champion Gold Medal given by the Hunters' Improvement and National Light Horse Breeding Society, for the best Mare four years old and upwards in Classes 42-45 which must be registered in the Hunter Stud Book, or the entry tendered within a month of the Award.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Polo and Riding Ponies.[1]

Class 48.—*Polo and Riding Pony Stallions, foaled in or before* 1917, *not exceeding* 15 *hands.* [6 entries.]

339 I. (£10, & R.N. for Champion.[2])—HUMPHREY R. PELLY, Lyndsays Farm, Ingatestone, Essex, for **Aviator** 853, chestnut, foaled in 1913, bred by Miss S. Corbett, Stableford, Bridgnorth; *s.* Champion White Wings 461, *d.* Telegram 2341

337 II. (£5.)—MRS. W. L. BEAL, East Harlsey, Northallerton, Yorks., for **Basuto Chief** 854 brown, foaled in 1913; *s.* Fairburn 1066, *d.* Whiteface 2957.

336 III. (£3.)—JAMES BROWN, 19 Newbottle Street, Houghton-le-Spring, Co. Durham, for **Toby**, bay or brown, foaled in 1909; *s.* Be Very Wise, *d.* Jane *by* Prince Otto or King Otto

334 R. N.—DENIS ALDRIDGE Sketchley Hall Farm, Hinckley, for **Sahara.**

Class 49.—*Polo and Riding Pony Colts, Fillies or Geldings, foaled in* 1919. [6 entries.]

343 I. (£10.)—G. NORRIS MIDWOOD, The Grange, North Rode, Congleton, for **Shilla'agh** (Supp. 1919), chestnut colt; *s.* Little Corona 814, *d.* Sligo 2nd 2524.

340 II. (£5.)—MAJOR H. FAUDEL-PHILLIPS, Moor Hall Stud, Cookham, Berks., for **Post Bellum** (Supp. 1919) chestnut filly; *s.* Stortford, *d.* Tarantella *by* Turgot

341 III. (£3.)—TRESHAM GILBEY, Whitehall, Bishops Stortford, Herts, for **Scooter,** (Supp 1920), bay colt; *s.* Goodward 948 *d.* Skedaddle.

345 R. N.—C. HOWARD TAYLOR, Middlewood Hall, Barnsley, for **Goody-two-Shoes.**

Class 50.—*Polo and Riding Pony Colts, Fillies or Geldings, foaled in* 1918. [4 entries.]

347 I. (£10, & Champion.[2])—G. NORRIS MIDWOOD, The Grange, North Rode, Congleton for **The Marne** (Supp. 1918) chestnut colt; *s.* Little Corona 814, *d.* Sligo 2nd 2524.

348 II. (£5, & R. N. for Champion.[3])—TRESHAM GILBEY, Whitehall, Bishops Stortford, Herts., for **Morning Glow,** bay filly; *s.* Prairie Fire, *d.* Coming Dawn *by* Mark For'ard.

349 III. (£3.)—C. HOWARD TAYLOR, Middlewood Hall, Barnsley, for **Perfection 2nd** (Supp. 1918), chestnut filly; *s.* Favourite 759, *d.* Calceolaria 2166 *by* Maréchal Neil 363.

346 R. N.—DENIS ALDRIDGE, Sketchley Hall Farm, Hinckley, for **Oasis.**

Class 51.—*Polo and Riding Pony Fillies or Geldings, foaled in* 1917. [6 entries.]

354 I. (£10, & Champion.[3])—TRESHAM GILBEY, Whitehall, Bishop's Stortford for **Rackette** (Supp 1914) bay filly; *s.* Rack Rent, *d.* St. Kilda.

353 II. (£5.)—CAPT. W. H. FRANCE-HAYHURST, Bostock Hall, Middlewich, Cheshire, for **Samuel** (vol 16), brown gelding; *s.* Chief Butler 665, *d.* Juliett 2nd (Supp. 1912) *by* Sandiway.

355 III. (£3.)—MAJOR H. A. WERNHER, Someries House, Regent's Park, London, N.W.1., for **Ikon,** brown gelding; *s.* Thruster, *d.* Fusee.

351 R. N.—C. C. ELLISON, Huttons Ambo Hall, York, for **The Baronet.**

Class 52.—*Polo and Riding Pony Mares, with Foals at foot, not exceeding* 14·2 *hands.* [2 entries.]

356 (£10.)—GEOFF KENYON, Plainville, Haxby, York, for **Toodie,** brown, foaled in 1910. [Foal *by* Primary.]

357 (£5, & B.M.[4])—MAJOR H. A. WERNHER, Someries House, Regent's Park, London, N.W.1., for **Icscee,** black, foaled about 1906. [Foal *by* Thruster.]

Arabs.[5]

Class 53.—*Arab Stallions, any age.* [6 entries.]

362 I. (£10.)—S. G. HOUGH, Springhouse Park, Theydon Bois, Epping, Essex, for **Nureddin 2nd** (vol. 1), chestnut, foaled in 1911, bred by W. S. Blunt, Newbuildings Place, Southwater, Sussex; *s.* Rijm, *d.* Nargileh *by* Mesaoud.

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[1] £25 towards these Prizes were given by the National Pony Society.

[2] Champion Gold Medal given by the National Pony Society for the best Colt or Stallion in Classes 48-50.

[3] Champion Gold Medal given by the National Pony Society for the best Mare or Filly in Classes 49-52.

[4] Bronze Medal given by the National Pony Society for the best Foal in Class 52 entered or eligible for entry in the Supplement to the National Pony Stud Book.

[5] £15 towards these Prizes were given by the Arab Horse Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

360 II. (£5.)—L. EDMUNDS, Cholderton, Salisbury, for **Shahyuda**, grey, foaled in 1913, bred by the late H. C. Stephens, Cholderton; *s.* Mootrub, *d.* Ruth Kesia *by* Ben Azrek.

358 III. (£3.)—H. V. MUSGRAVE CLARK, White Hart Hotel, Lewes, Sussex, for **Mustapha Kamel** (vol. 1), bay, foaled in 1906, bred by Lady Anne Blunt, Crabbett Park, Sussex; *s.* Feysul, *d.* Mabsuta *by* Mesaoud.

363 R. N.—HUGH F. MACLACHLAN, Woodend, Styal, Cheshire, for **Raml.**

Class 54.—*Arab Mares, with Foals at foot.* [5 entries.]

366 I. (£10.)—S. G. HOUGH, Springhouse Park, Theydon Bois, Epping, Essex, for **Ruth Kesia** (vol. 1), flea bitten grey, foaled 1903, bred by the late H. C. Stephens, Cholderton, Wilts; *s.* Ben Azrek, *d.* Borak *by* Boanerges. [Foal *by* Mueddin 2nd, vol. 1.]

365 II. (£5.)—H. V. MUSGRAVE CLARK, White Hart Hotel, Lewes, Sussex, for **Nessima** (vol. 1), bay, foaled in 1909, bred by Lady Anne Blunt, Crabbett Park, Sussex; *s.* Rijm, *d.* Nargilch *by* Mesaoud. [Foal *by* Skovronek.]

364 III. (£3.)—H. V. MUSGRAVE CLARK, for **Feluka** (vol. 1), chestnut, foaled in 1899, bred by Lady Anne Blunt, Crabbett Park, Sussex; *s.* Mesaoud, *d.* Ferida. [Foal *by* Skovronek, vol. 1.]

367 R. N.—S. G. HOUGH, for **Sheeba.**

Cleveland Bays.[1]

Class 55.—*Cleveland Bay Stallions, foaled in* 1917 *or* 1918. [1 entry.]

369 I. (£10, & R. N. for Champion.[2])—GEORGE ELDERS, JUN., Hawthorndale Farm, Whitby, Yorks., for **Toft House Lad 1739**, bay, foaled in 1917, bred by George Elders, Toft House, Aislaby; *s.* Aislaby Lad 1722, *d.* Woodland Starlight 1328 *by* Woodland Pride 1659.

Class 56.—*Cleveland Bay Stallions, foaled in or before* 1916. [5 entries.]

370 I. (£10, & Champion.[2])—HIS MAJESTY THE KING, Royal Mews, Buckingham Palace, London, S.W. 1., for **Beadlam Brisco 1734**, foaled in 1914, bred by George Scoby, Beadlam Grange, Nawton; *s.* King George 5th 1716, *d.* Daisy 1356 *by* Leveret 1351.

374 II. (£5.)—JOHN WELFORD, Grange Farm, Loftus, Yorks., for **Grange Lad 1744**, foaled in 1916; *s.* Aislaby Lad 1722 *d.* Lady Stainthorpe 718 *by* Lord Hillingdon 988.

371 III. (£3.)—CLEVELAND BAY HORSE SOCIETY, Grove House, Norton, Stockton-on-Tees, for **Charmer 1737**, foaled in 1913, bred by John Hill, Nipehowe, Hawkser, Whitby; *s.* Cholderton Luck 1712, *d.* Barnby Star 1340 *by* Rosedale 1692.

H. C.—372, 373.

Class 57.—*Cleveland Bay Fillies, foaled in* 1917 *or* 1918. [3 entries.]

377 I. (£10, & Champion.[3])—JOHN WELFORD, Grange Farm, Loftus, Yorks., for **Grange Delight 1400**, foaled in 1918; *s.* Loftus Favourite 1723, *d.* Maid of Loftus 1734 *by* Pitch and Toss 1204.

375 II. (£5.)—GEORGE ELDERS, JUN., Hawthorndale Farm, Whitby, Yorks. for **Hawthorn Rose 1383**, foaled in 1917, bred by George Elders, Toft House, Aislaby, Sleights; *s.* Aislaby Lad 1722, *d.* Aislaby Starlight 1388 *by* Aislaby Pride 1697.

Class 58.—*Cleveland Bay Mares, with Foals at foot.* [5 entries.]

381 I. (£10, & R. N. for Champion.[3])—E. LLOYD PEASE, Hurworth Moor, Darlington, for **The Witch 1322**, foaled in 1908; *s.* Potto Hatton 1603, *d.* Horsfalls Darling 532 *by* Fidino Dins 107. [Foal *by* Beadlam Brisco 1734.]

379 II. (£5.)—GEORGE ELDERS, JUN., Hawthorndale Farm, Whitby, Yorks., for **Aislaby Starlight 1338**, foaled in 1909, bred by George Elders, Toft House, Aislaby, Sleights; *s.* Aislaby Pride 1697, *d.* Hawthorn Darling 1294 *by* King Fred 1523. [Foal *by* Aislaby Lad 1772.]

380 III. (£3.)—C. S. FISHBURN, Thorpe Thewles, Ferryhill, Co. Durham, for **Norton Britannia 1378**, foaled in 1915, bred by W. Fletcher, Norton-on-Tees; *s.* Aislaby Lad 1722, *d.* Ingleby Rose 1295 *by* Ingleby Marquis. [Foal *by* Beadlam Brisco.]

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[1] £20 towards these Prizes were given by the Cleveland Bay Horse Society.

[2] Champion Prize of £5 given by the Cleveland Bay Horse Society for the best Stallion in Classes 55 and 56.

[3] Champion Prize of £5 given by the Cleveland Bay Horse Society for the best Mare or Filly in Classes 57 and 58.

[Unless otherwise stated, each prize animal named below was bred by exhibitor]

Yorkshire Coach Horses [1]

Class 59 —*Yorkshire Coach Horse Stallions foaled in* 1917 *or* 1918 [3 entries]

383 I (£10, & Champion [2])—WILLIAM GRAYSON Normanby House Pickering Yorks for Priory Monk [illegible] foaled in 1917 bred by Robinson Bros Priory Farm Grosmont *s* Aislaby Lad 2542 *d* Priory Hilda 1315 *by* King George 5th 1718

385 II (£5)—WILLIAM GRAYSON for The Wake 2606 foaled in 1917 bred by Winspear Bros [illegible] *s* Aislaby Lad 2542 *d* Woodlands May 1223 *by* Breaston Prince 2451

Class 60 —*Yorkshire Coach Horse Stallions foaled in or before* 1916 [5 entries]

38[illegible] I (£10 & R N for Champion [2])—H M THE KING Royal Mews Buckingham Palace London S W 1 for Tantalus [illegible] foaled in 1911 bred by Dobson Coates Eastgate Pickering *s* Breaston Prince 2451 *d* Violet 1199 *by* Lord Chief Justice 1244

[illegible] II (£5)—JOHN LETT Rillington York for Rillington Victor 2536 foaled in 1910 bred by the late William Wood, Bilsdale York *s* Breaston Prince 2451 *d* Queen's Pocket [illegible] *by* Prince of the Dales

357 III (£3)—FRANCIS HENRY CARR Kexby House Kexby Bridge Yorks for Kexby Majesty [illegible] foaled in 1914 *s* King George 5th 1718 *d* Queen Mary 1179 *by* Breaston Prince 2451

H C—389

Class 61 —*Yorkshire Coach Horse Fillies foaled in* 1917 *or* 1918 [3 entries]

392 I (£10 & R N for Champion [3])—WILLIAM GRAYSON Normanby House Pickering Yorks for Glenesk 1314 foaled in 1917 bred by James Ward Bird Farm Grosmont, *s* Aislaby Lad 2542 *d* Fanny 1310 *by* McNeil's Barnaby 1832

391 II (£5)—FRANCIS HENRY CARR Kexby House Kexby Bridge Yorks for Lady Mary foaled in 1918, *s* Kexby Majesty *d* Yorkshire Princess 120[illegible] *by* Breaston Prince 2451

Class 62 —*Yorkshire Coach Horse Mares with Foals at foot* [3 entries]

3[illegible]5 I (£10, & Champion [3])—GEORGE ELDERS JUN Hawthorndale Farm Whitby Yorks for Aislaby Rose 1290 foaled in 1915 bred by George Elders Toft House Aislaby Sleights *s* Aislaby Lad 2542, *d* Aislaby Starlight 1172 *by* Aislaby Pride 2463 [Foal *by* Grange Hero 1742]

394 II (£5)—FRANCIS HENRY CARR Kexby House Kexby Bridge Yorks for Yorkshire Princess 1[illegible]0 foaled in 1911 *s* Breaston Prince 2451 *d* Lady Carlisle 1057 *by* Primrose Carlisle [illegible] [Foal *by* Kexby Majesty [illegible]]

396 III (£3)—J W LETT Scagglethorpe Manor Malton Yorks for Rillington Victory, foaled in 191[illegible] bred by John Lett Rillington *s* Childerton Luck 2517 *d* Rillington Attraction 1145 *by* Special Delight 2390 [Foal by Rillington Victor 2536]

Hackneys [4]

Class 63 —*Hackney Stallions foaled in* 1916 [6 entries]

401 I (£10)—T E RUSHWORTH [illegible] Bargate Grimsby for Carleton Gay Fashion 13[illegible] dark chestnut bred by W J Tennant Carleton Pontefract *s* Carleton Quality 12595 *d* [illegible] Lady 18[illegible] *by* Royal Danegelt [illegible]

398 II (£5)—HERBERT JONES Eytonhurst Rhyl for Huntington Merrylegs 13406 dark chestnut *s* Salford Victor 12918 *d* Huntington Topsey 19998 *by* Rowton Merrylegs [illegible]

399 III (£3)—C F KENYON Steele Whitchurch Salop for Vanus Grand Fashion, bay bred by T P Flower Leicester *s* Mathias 6473 *d* Westfield Surprise 21744 *by* Paddock Polonius [illegible]

39[illegible] R N—JOHN CHARLES HILLS Marsh Farm Punham Great Yarmouth for Interpreter

H C—[illegible]

Class 64 —*Hackney Stallions foaled in or before* 1917 *over* 14 *and not exceeding* 15 2 *hands* [9 entries]

405 I (£10 & R N for Champion [5])—WILLIAM GREENWOOD Gledhow Hall Farm Roundhay Leeds for Airedale Proctor 15360 chestnut *s* King's Proctor 11102 *d* Belle Mere 21[illegible] *by* Polonius 4931

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[1] £20 towards these Prizes were given by the Yorkshire Coach Horse Society

[2] Champion Prize of £5 given by the Yorkshire Coach Horse Society for the best Stallion in Classes 59 and 60

[3] Champion Prize of £5 given by the Yorkshire Coach Horse Society for the best Mare or Filly in Classes 61 and 62

[4] £90 towards the Prizes for Hackneys and Hackney Ponies were given by the Hackney Horse Society

[5] Champion Gold Medal, given by the Hackney Horse Society for the best Stallion in Classes 63 65

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

406 **II. (£5.)**—SIR LEES KNOWLES, BT., C.V.O., O.B.E., Westwood, Pendlebury, Manchester, for **Salford Victor 12918**, chestnut, foaled in 1914; *s.* Hopwood Viceroy 9280, *d.* Knowle Halma 13633 *by* His Majesty 2513.

410 **III. (£3.)**—J. E. RUSHWORTH, Eskdale, Bargate, Grimsby, for **Carleton Quality** 12595, dark chestnut, foaled in 1913, bred by W. J. Tennant, Carleton, Pontefract; *s.* Hopwood Viceroy 9280, *d.* Maroie 14542 *by* Connaught 1453.

403 **R. N.**—DR. HOWARD S. CHAVASSE, 56 High Street, Sutton Coldfield, Birmingham, for **Tudor Emperor.**
H. C.—409.

Class 65.—*Hackney Stallions, foaled in or before* 1917, *over* 15·2 *hands.* [4 entries.]

413 **I. (£10, & Champion.[1])**—H. HINRICHSEN, Grotto House, Higher Peover, Knutsford, Cheshire, for **Bertrano** 13288, chestnut, foaled in 1917; *s.* King's Proctor, 11102, *d.* Ophelia's Daughter Grace 18479 *by* Royal Danegelt 5785.

412 **II. (£5.)**—MRS. FLETCHER & SONS, The Grange, Angram, York, for **Angram, Champion** 13301, chestnut, foaled in 1917, bred by the Exors. of the late C. Mitchell, Enthorpe House Middleton-on-the-Wolds; *s.* Angram Majesty 11967, *d.* Enthorpe Vanity 19057 *by* His Majesty 2513.

414 **III. (£3.)**—C. F. KENYON, Steele, Whitchurch, Salop, for **Cudham Leader 13476**, chestnut, foaled in 1917, bred by F. J. Stephenson, Wandale Farm, Bridlington; *s.* Kirkburn Leader 12875, *d.* Lady Elms 15217 *by* The Marquis 6122.
H. C.—415.

Class 66.—*Hackney Fillies or Geldings, foaled in* 1918. [6 entries.]

420 **I. (£10.)**—A. E. ROBERTS, Hollin House, Court Road, Tunbridge Wells, Kent, for **Queen of the Movies** 247.2, dark chestnut filly, bred by A. Basil Kensington, Haverbrack, Uckfield, Sussex; *s.* Garston Proctor 12843, *d.* Garston Leopardess 22009 *by* Leopard 9783.

416 **II. (£5.)**—C. EDWARD E. COOKE, Manor House, Bygrave, Baldock, Herts, for **Bygrave Marguerite** 25016, bay filly; *s.* Leopard 9783, *d.* Primrose Path 11400 *by* Lord Denby 2nd 3092.

419 **III. (£3.)**—FRANK LLOYD, Eyton House, Wrexham, for **Danum Meadow Sweet**, chestnut filly, bred by Ernest Bewley, Danum, Rathgar, co. Dublin; *s.* Mathias 6473, *d.* Woodhatch Sunflower 22307 *by* Polonius 4931.

418 **R. N.**—ENOCH GLEN, Kaim Park, Bathgate, Scotland, for **Victory Bonds.**
H. C.—417.

Class 67.—*Hackney Fillies or Geldings, foaled in* 1917. [4 entries.]

424 **I. (£10.)**—HUBERT GROOM, Sunderland, Docking, Norfolk, for **Creake Sybil 25039**, chestnut filly, bred by the late H. V. Sheringham, South Creake, Norfolk; *s.* Creake Antonius 12602, *d.* Creake Sylvia 15017 *by* Challenger 3013.

423 **II. (£5.)**—ENOCH GLEN, Kaim Park, Bathgate, Scotland, for **Danum Becky 24853**, chestnut filly, bred by Ernest Bewley, Danum, Rathgar co. Dublin; *s.* Adbolton Kingmaker 12274. *d.* Ambitious Becky 21845 *by* Beckingham Squire 8070.

422 **III. (£3.)**—SAMUEL BREARLEY, Rosslyn, Healey, Batley, Yorks, for **Rosslyn Princess** 25032, chestnut filly; *s.* Angram Astonishment 10930, *d.* Rosslyn Forest Queen 24065 *by* His Majesty 2513.

425 **R. N.**—A. E. ROBERTS, Hollin House, Court Road, Tunbridge Wells, Kent, for **Red Girl.**

Class 68.—*Hackney Mares, with Foals at foot.* [5 entries.]

429 **I. (£10, & Champion.[2])**—SIR LEES KNOWLES, BT., C.V.O., O.B.E., Westwood, Pendlebury, Manchester, for **Slashing Dorothy** 23769, chestnut, foaled in 1913, bred by the late Sir Walter Gilbey, Bt., Elsenham Hall, Essex; *s.* Antonius 10559, *d* Flash Dorothy 19088 *by* Forest Star 7445. [Foal *by* King's Chamberlain 13407]

427 **II. (£5, & R.N. for Champion.[2])**—HENRY GILDING, Gateacre, Liverpool, for **Creake Lady** 23912, chestnut, foaled in 1914, bred by the late H. V. Sheringham, South Creake, Norfolk; *s.* Antonius 10559, *d.* Creake Connie 18130 by Manifred 5301. [Foal *by* Cudham Candidate 13181.]

428 **III. (£3.)**—HENRY GILDING, for **Flash Clara** 19087, chestnut, foaled in 1906, bred by the late Sir Walter Gilbey, Bt., Elsenham Hall, Essex; *s.* Royal Danegelt 5785, *d.* Bonnie Clara 6419 *by* Connaught 1453. [Foal *by* Adbolton Forest King 12959.]

426 **R. N.**—A. BROMBY, Hart Lane, West Hartlepool, for **Raby Beatty.**

Class 69.—*Hackney Foals, the produce of Mares in Class* 68. [3 entries.]

433 **I. (£5.)**—SIR LEES KNOWLES, BT., C.V.O., O.B.E., Westwood, Pendlebury, Manchester, for black colt, foaled April 10; *s.* King's Chamberlain 13407, *d.* Slashing Dorothy 23769 *by* Antonius 10556.

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[1] Champion Gold Medal, given by the Hackney Horse Society, for the best Stallion in Classes 63-65.

[2] Champion Gold Medal, given by the Hackney Horse Society, for the best Mare or Filly in Classes 66-68.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

432 II. (£3.)—HENRY GILDING, Gateacre, Liverpool, for chestnut filly, foaled April 12; *s.* Cudham Candidate 13181, *d.* Creake Lady 23912 *by* Antonius 10559.
431 III. (£2.)—A. BROMBY, Hart Lane, West Hartlepool, for chestnut colt, foaled April 26; *s.* Angram Majesty 11967, *d.* Raby Beatty 24357 *by* Nugget 6152.

Hackney Ponies.

Class 70.—*Hackney Pony Stallions, foaled in* 1917 (*not exceeding* 13·3 *hands*), *or* 1918 (*not exceeding* 13·2 *hands*). [3 entries.]

434 I. (£10, & Champion.[1])—W. W. BOURNE, Garston Manor, Watford, Herts., for **Bricket Fusilier** 13504, bay, foaled in 1918; *s.* Fusee 12626, *d.* Colne Marvel 23909 *by* Gentleman John 8624.
435 II. (£5.)—ROBERT HORNER, 39 Waterloo Road, Middlesbrough, Yorks., for **Little Aeroplane** 13512, bay, foaled in 1917; *s.* Fusee 12626, *d.* Sweet Liberty 25321 *by* Successful 8314.
436 III. (£3.)—J. E. RUSHWORTH, Eskdale, Bargate, Grimsby, for **Sarmiento** 13480, bay, foaled in 1918, bred by Mrs. F. E. Judson, 30 Holland Park, London, W.; *s.* Torchfire 9472, *d.* Kitty Melbourne 20795 *by* Successful 8314.

Class 71.—*Hackney Pony Stallions, foaled in or before* 1916, *not exceeding* 14 *hands*. [3 entries.]

439 I. (£10, & R.N. for Champion.[1])—MRS. A. C. KING, Braishfield Manor, Romsey, Hants, for **Braishfield Furore** 13158, bay, foaled in 1916; *s.* Fusee 12626, *d.* Tissington Convert 21086 *by* Tissington Gideon 9042.
437 II. (£5.)—THOMAS GOLDSBROUGH, Stokesley, S.O., Yorks., for **Fairy King** 12836, chestnut, foaled in 1913; *s.* Talke Fire King 9932, *d.* Julia Snorer 18307 *by* Julius Cæsar 2nd 5666.
438 III. (£3.)—JOHN THOMAS HARE, Spencer Beck Farm, Normanby, Eston, Yorks., for **Lochnavar** 11815, bay, foaled in 1910, bred by E. J. Brown, Cross Acres, Gatley, Cheshire; *s.* General Grudon 10232, *d.* Seaham Nivette 19512 *by* Monte Christo 7933.

Class 72.—*Hackney Pony Fillies or Geldings, foaled in* 1917 (*not exceeding* 13·3 *hands*), *or* 1918 (*not exceeding* 13·2 *hands*). [4 entries.]

443 I. (£10, & R. N. for Champion.[2])—J. E. RUSHWORTH, Eskdale, Bargate, Grimsby, for **Diana Southworth** 25053, bay filly, foaled in 1917, bred by Joshua Ball, Southworth Hall, Warrington; *s.* Southworth Swell 11219, *d.* Southworth Merriment 21674 *by* Southworth Tissington 9898.
442 II. (£5.)—C. F. KENYON, Steele, Whitchurch, Salop, for **Buckley Gem** 25045, dark brown filly, foaled in 1918, bred by W. H. Jebson, Wilton House, Pocklington; *s.* Melbourne Shot 13055, *d.* Belle Wilton 24439 *by* Successful 8314.
440 III. (£3.)—J. BLAKELOCK, Shawfield, Healey, Rochdale, for **La Bella** 25014, brown filly, foaled in 1918, bred by Mrs. F. E. Judson, Holland Park, London; *s.* Torchfire 9472, *d.* Lucy Brown 22672 *by* Charming Boy 10979.
421 R. N.—J. W. G. SMITH, Aysgarth, S.O., Yorks, for **Miss Enid.**

Class 73.—*Hackney Pony Mares, with Foals at foot, not exceeding* 14 *hands*. [5 entries.]

444 I. (£10, & Champion.[2])—W. W. BOURNE, Garston Manor, Watford, Herts, for **Tissington Bauble** 20296, dark bay, foaled in 1908, bred by Sir Gilbert Greenall, Bart., Walton Hall, Warrington; *s.* Berkeley Claudius 8372, *d.* Tissington Evalina 17001 *by* Warrener 8025. [Foal *by* Fusee 12626.]
448 II. (£5.)—P. W. WILDSMITH, 27 Cleveland Terrace, Darlington, for **Glenavon Glide** 23951, brown, foaled in 1914, bred by John B. Verel, Bridgeton, Montrose; *s.* Torchfire 9472, *d.* Polly Derby 13846 *by* Sir Gibbie 1612. [Foal *by* Sir Ivor 12737.]
446 III. (£3.)—ENOCH GLEN, Kaim Park, Bathgate, Scotland, for **Glenavon Satellite** 24507, bay, foaled in 1916; *s.* Torchfire 9427, *d.* Glenavon Princess Caprice 23129 *by* Fireboy 7440. [Foal *by* Berkeley Nugget 8374.]

Dales Ponies.[3]

Class 74.—*Dales Pony Stallions, foaled in* 1917, 1918 *or* 1919. [7 entries.]

455 I. (£10.)—JOHN W. PEART, Hill End, Wearhead, co. Durham, for **Thunderbolt** 955, grey, foaled in 1917, bred by Jacob Scott, Beck Foot, Middleton-in-Teesdale; *s.* Teesdale Comet, *d.* Fanny *by* Young Chancellor.

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[1] Champion Gold Medal given by the Hackney Horse Society, for the best Stallion in Classes 70 and 71.

[2] Champion Gold Medal given by the Hackney Horse Society, for the best Mare or Filly in Classes 72 and 73.

[3] £20 towards these Prizes were given by the Dales Pony Improvement Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

454 II. (£5.)—RALPH HARRISON, High Scrogg Farm, Middleton St. George, Darlington, for **Hilton Jock** 965, grey, foaled in 1918, bred by John Townson, Hilton Moor, Bishop Auckland; *s.* Mountain Ranger, *d.* White Heather *by* Teesdale Comet.

453 III. (£3.)—T. E. DOUGILL, 72 Victoria Road, Darlington, for **Fairy King** 992, steel grey, foaled in 1918; *s.* Merry Jock, *d. by* Dalesman.

449. R.N.—ROY B. CHARLTON, Queen's Letch, Hexham-on-Tyne, for **Linnel Grey Dale** 983, grey, foaled in 1919, bred by Tom Forster, Glen Hill, Allendale; *s.* Linnel Comet 841, *d.* Jess of Glenhill 3273

C.—452.

Class 75.—*Dales Pony Stallions, foaled in or before* 1916. [7 entries.]

460 I. (£10.)—CAPT. T. S. CHRISTIE, Wardrew, Gilsland, *via* Carlisle, for **Linnel Comet** 841, black, foaled in 1913, bred by Thomas Stainton, Tebay, Westmorland; *s.* Daddy's Lad.

458 II. (£5.)—JAMES H. BROWN, Cordilleras, Marske, Richmond, Yorks., for **Gentleman John** 907, grey, foaled in 1915; *s* Teesdale Comet, *d.* Topsy *by* Green Gate Squire.

456 III. (£3.)—FORSTER ARMSTRONG, Beacon Grange, Hexham, Northumberland, for **Highland Laddie** 642, black, foaled in 1910, bred by Thomas V. Emerson, Hay Gate, Eastgate; *s.* Mountain Hero 2nd, *d.* Heather Bell *by* Blooming Heather.

462 R. N.—SAMUEL ROBSON, 20 Brandon Village, Durham, for **Black Blooming Heather.**

Class 76.—*Dales Pony Fillies, foaled in* 1917, 1918 *or* 1919. [8 entries.]

465 I. (£10, & R. N. for Champion.[1])—CAPT. T. S. CHRISTIE, Wardrew, Gilsland, *via* Carlisle, for **Miss Dale** 3632, dark brown, foaled in 1917, bred by R. O. Blayney, West Land End, Haydon Bridge; *s.* Silver Top 833, *d.* Lady Dale 3208.

468 II. (£5.)—NORMAN FIELD, Lartington Hall, Darlington, for **Corkfield Topsy** 3696, bay, foaled in 1917, bred by F. B. Metcalf, Marwood, Barnard Castle.

466 III. (£3.)—J. W. DALTON, Snowhope Close, Stanhope, co. Durham, for **Dewdrop** 3743, dark bay, foaled in 1917, bred by Mr. Bell, Marwood, Barnard Castle; *s.* Bendle Squire, *d. by* Old Blooming Heather.

467 R. N.—J. W. DALTON, for **Heather Blossom 2nd.**

Class 77.—*Dales Pony Mares, with Foals at foot, by a registered Dales Pony Sire.* [8 entries.]

477 I. (£10, & Champion.[1])—SANDERSON & SONS, Stanhope, Weardale for **Stanhope Beauty** 3331, black, foaled in 1915, bred by T. Dixon Hutchinson, Wythwaite; *s.* Young Sir Harry, *d.* Emma 6455 *by* Cross Fell Hero. [Foal *by* Black Blooming Heather.]

472 II. (£5.)—ROY B. CHARLTON, Queen's Letch, Hexham-on-Tyne, for **Linnel Martha** 3279, bay, foaled in 1912. [Foal *by* Linnel Comet 841.]

471 III. (£3.)—THOMAS BLACKETT, Westgarth, Butterknowle for **Westgarth Sprightly Spark** 3587, brown, foaled in 1915; *s.* Royal Ratho, *d.* Westgarth Maid of Honour 3586 *by* Real Fashion. [Foal *by* Teesdale Comet 904.]

478 R. N.—JOHN TOWNSON, Hilton Moor, Bishop Auckland, for **White Heather.**

Fell Ponies.[2]

Class 78.—*Fell Pony Stallions, foaled in* 1917, 1918 *or* 1919, *not exceeding* 14 *hands.* [2 entries.]

480 I. (£10.)—THE EARL OF LONSDALE, Lowther, Penrith, for **Mina,** black, foaled in 1917; *s.* Glengarry, *d.* Shrike *by* Mikado.

479 II. (£5.)—ROY B. CHARLTON, Queen's Letch, Hexham-on-Tyne, for **Linnel Greybird** 984, grey, foaled in 1917.

Class 79.—*Fell Pony Stallions, foaled in or before* 1916, *not exceeding* 14 *hands.* [2 entries.]

482 I. (£10.)—JOHN RELPH, Turn Bank, Shap, Westmorland, for **Glengarry** 640, black, foaled in 1911, bred by Thomas Glen, Brackenber, Appleby; *s.* British Boy 574, *d.* Fanny *by* Blooming Heather 325.

481 II. (£5.)—JOHN HUDSON, Beck Side, Sleddale Shap, for **Dreadnought** 573, brown, foaled in 1905; *s.* King of the Dales, *d.* Molly *by* Pride of the North.

Class 80.—*Fell Pony Fillies, foaled in* 1917, 1918 *or* 1919, *not exceeding* 14 *hands.* [1 entry.]

483 II. (£5.)—HENRY HOLME & SONS, Thrimby, Hackthorpe, Penrith, for **Fancy 2nd** 3722, black, foaled in 1917, bred by Henry Holme; *s.* Dalesman 572, *d.* Flora 3rd 2249 *by* Mighty Atom 382.

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[1] Challenge Cup given by the Dales Pony Improvement Society for the best Registered Mare or Filly in Classes 76 and 77.

[2] £20 towards these Prizes were given by the Fell Pony Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 81.—*Fell Pony Mares (with Foals at foot), not exceeding* 14 *hands.* [4 entries.]

485 I. (£10.)—JOSEPH WILLIAM DENT, Fair View, Middleton-in-Teesdale, for **Monks Fanny** 3383, black, foaled in 1915; *s* Mountain Ranger 598, *d* Stanhope Gate Fanny 2436 *by* Little John 599. [Foal *by* Sporting Times 1916].

484 II. (£5.)—JOSEPH ALLINSON & SON, Linglow, Great Asby, Appleby, for **Fanny Dale** 38 1, black, foaled in 1914, bred by John Relph, Turnbank, Shap. [Foal *by* Glengarry.]

487 III. (£3.)—THOMAS STAINTON, Town Head Farm, Tebay, Westmorland, for **Heather Belle 4th** 3829, bay, foaled in 1913, bred by W. Stainton, Town Head, Tebay; *s.* Heather Model, *d* Fanny *by* Sunshine. [Foal *by* North Star 3rd 970.]

Welsh.[1]

Class 82.—*Welsh Cob Stallions, foaled in or before* 1916. [2 entries.]

488 I. (£10.)—H. MEYRICK JONES, Mathrafal, Meifod, Oswestry, for **Mathrafal Eiddwen** 965, bay, foaled in 1914, bred by Mr Lloyd, Llanerfyl, Welshpool; *s.* King Flyer 35, *d* Polly of Maesglynog 4295 *by* Cymro Ddu.

489 II. (£5.)—W. ARTHUR PUGHE, Burbage, Hinckley, Leicestershire, for **Gwyndy Cymro Derus**, brown, foaled in 1913, bred by Mr. Jones, Pentre Poeth, Llanfyllin; *s.* Llwyn Planet 523.

Class 83.—*Welsh Cob Mares, foaled in or before* 1916, *with Foals at foot, not exceeding* 15 *hands.* [No entry.]

Class 84.—*Welsh Pony Stallions, foaled in* 1916 (*not exceeding* 12 *hands*) *or* 1917 (*not exceeding* 11·3 *hands*), *or* 1918 (*not exceeding* 11·2 *hands*). [3 entries.]

491 I. (£10.)—T. B. LEWIS, Bronallt, Llanwrtyd Wells, for **Irfon Talisman** 896, red roan, foaled in 1916; *s.* Dyoll Starlight 4, *d.* Star of Eppynt 4525.

490 II. (£5.)—CHARLES COLTMAN-ROGERS, Stanage Park, Radnorshire, for **Stanage Sunrise** 991, grey, foaled in 1916; *s.* Shooting Star 73, *d.* Stanage Satellite 2556 *by* Dyoll Starlight 4.

492 III. (£3.)—F. FFITCH MASON, The Faraam, Killay, R.S.O., Glam., for **Penarth Shooting Star** 939, dark grey, foaled in 1917, bred by T. J. Powell, Pennybont, Radnorshire; *s* Shooting Star 73, *d* Penarth Greylight 1800 *by* Greylight 80.

Class 85.—*Welsh Pony Stallions foaled in or before* 1915, *not exceeding* 12 *hands.* [5 entries.]

494 I. (£10.)—MRS H. D. GREENE, Grove, Craven Arms, R.S.O., Salop, for **Grove King Cole 2nd** 565, grey, foaled in 1911; *s* Grove King 197, *d.* Bleddfa Tell Tale 943 *by* Tyrant.

495 II. (£5.)—MRS H. D. GREENE, for **Shooting Star** 73, white, foaled in 1901, bred by S. M. Wilmot, The Châlet, Alvestone, Glos.; *s.* Dyoll Starlight 4, *d.* Alveston Belle 572 *by* Cymra.

493 III. (£3.)—CHARLES COLTMAN-ROGERS, Stanage Park, Radnorshire, for **Stanage Daylight** 248, grey, foaled in 1905, bred by D. Price, Queen's Square, Llangattock; *s.* Dyoll Starlight 4, *d.* Star 1st 248 *by* Merlyn Myddfai.

497 **R.N.**—THE DUCHESS OF NEWCASTLE, Clumber Park, Worksop, for **Grove Elfin.**

Class 86.—*Welsh Pony Mares, foaled in or before* 1916, *with Foals at foot, not exceeding* 12 *hands.* [4 entries.]

498 I. (£10.)—MRS H. D. GREENE, Grove, Craven Arms, R.S.O., Salop, for **Grove Fairy Queen** 5469, chestnut, foaled in 1915; *s.* Shooting Star 73, *d.* Grove Fairy 2531. [Foal *by* Grove Grey Dawn 893.]

500 II. (£5.)—THE DUCHESS OF NEWCASTLE, Clumber Park, Worksop, Notts., for **Clumber Janet 3rd** 3755, grey, foaled in 1908; *s.* Hardwick Sensation, *d.* Janet 2nd. [Foal *by* Hardwick Conqueror 668.]

499 III. (£3.)—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, Derbyshire, for **Grove Dora** 5781, grey, foaled in 1916, bred by Mrs. H. D. Greene, Grove, Craven Arms, R.S.O.; *s.* Shooting Star 73, *d.* Grove Dolly 1486 *by* Dick Hill 49. [Foal by Baediker 500.]

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[1] £30 towards these Prizes, and Silver Medals and Illustrated Certificates to the First Prize Winners, were given by the Welsh Pony and Cob Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Shetland Ponies.

Class 87.—*Shetland Pony Stallions, foaled in or before* 1917, *not exceeding* 10·2 *hands.* [6 entries.]

503 I. (£10, & R. N. for Champion.[1])—MRS. ETTA DUFFUS, Penniwells, Elstree, Herts., for **Vagary of Penniwells** 841, black, foaled in 1912, bred by Ladies Hope, South Park, Bodiam : *s.* Helium 452, *d.* Viola 2168 *by* Oman 33.

507 II. (£5.)—R. W. R MACKENZIE, Earlshall, Leuchars,. Fife. for **Why Not of Earlshall** 898, grey, foaled in 1913 ; *s.* Empire Day 539, *d.* Hillswick White Wings 589.

502 III. (£3.)—MRS. ETTA DUFFUS, for **Huzzon of Penniwells** 864, black, foaled in 1914, bred by Charles A. Rehdu, Kirkcarswell ; *s.* Haldor 270, *d.* Barbara of Penniwells 29 9 *by* Nautilus 511.

505 R. N.—MISS E. M. JOLLIFFE, Newbus Grange, Darlington, for **Boadventure of Earlshall.**

Class 88.—*Shetland Pony Mares, with Foals at foot, not exceeding* 10·2 *hands.* [10 entries.]

510 I. (£10 & Champion.[1])—MRS. ETTA DUFFUS, Penniwells, Elstree, Herts., for **May Queen of Penniwells** 3348, black, foaled in 1911 : *s.* Dante of Coalville 444, *d.* Mayfly of Penniwells 2582 *by* Glencairn 314. [Foal *by* Remus of Penniwells 831.]

517 II. (£5.)—R. W. MACKENZIE, Earlshall. Leuchars, Fife, for **Rose of Earlshall**, black. foaled in 1913 ; *s.* Helmet of Earlshall 408, *d.* Rhoda of Earlshall 2738 *by* Thor 83. [Foal by Bandroi 635.]

516 III. (£3.)—MRS. S. C. E. LLOYD. Wood Hall, Norton, Worcester, for **Birthright** (vol. 23 p. 127), black, foaled in 1912, bred by Lady Arthur Cecil The Mount, Lymington, Hants ; *s.* Forest Heirloom 541, *d.* Britannia 2798 *by* Vulcan 252. [Foal by Besieger 235.]

508 R. N.—R. W. CRESWELL-WARD, Neasham Hill, Darlington, for **Frou Frou.**

Hunter Riding Classes.[2]

Class 89.—*Hunter Mares or Geldings, foaled in* 1916, *up to from* 12 *to* 14 *stones.* [7 entries.]

528 I. (£15.)—JOHN C. STRAKER, The Leazes, Hexham, for **Irish Knight**, bay gelding ; *s.* Denis Richard, *d.* Banshee 2nd *by* Kilmarnock.

532 II. (£10.)—T. H. WARREN, Boughton, Northampton, for **Over the Top** 5620, chestnut filly ; *s.* Chantuer.

519 III. (£5.)—F. G. D. COLMAN, Great Burgh, Epsom, Surrey, for **Gratis**, brown mare ; *s.* Rockaway.

520 IV. (£3.)—GEOFF KENYON, Plainville, Haxby. York, for **South Shore**, bay gelding.

527 R. N.—JACOB SMITH, Somerley, Boroughbridge Road, Knaresborough. for **Special.**

Class 90.—*Hunter Mares or Geldings, foaled in* 1916, *up to more than* 14 *stones.* [8 entries.]

535 I. (£15.)—WILLIAM BARKER BROWN, South Holme, Slingsby, Malton, Yorks., for **The Joker**, bay gelding.

537 II. (£10.)—F. W. FLINTOFF, Bridge House, Cuckney, Mansfield, for **Charger**, brown gelding ; *s.* Longboat, *d* Streatham Queen.

538 III. (£5.)—JAMES MITCHELL, Greengill, Penrith, for **Greystoke**, grey gelding.

533 IV. (£3.)—JOHN BROWN, The Common, Kirbymoorside, for **Brandy**, brown gelding

Class 91.—*Hunter Mares or Geldings, foaled in or before* 1916, *up to from* 12 *to* 14 *stones.* [15 entries.]

522 I. (£15.)—GEOFF KENYON, Plainville, Haxby, York, for **Pussyfoot**, bay gelding, foaled in 1914.

534 II. (£10.)—JOHN BROWN, The Common, Kirbymoorside, for **Reg**, bay gelding, foaled in 1915, bred by W. Vizard, Hayesden, Tonbridge ; *s.* Hanover Square.

549 III. (£5.)—NORMAN FIELD, Lartingdon Hall, Darlington, for **Sandstone**, bay gelding, foaled in 1914.

526 IV. (£3.)—THOMAS H. ROBSON, Burtree House, Cockerton, Darlington, for **Top Hole**, bay gelding ; *s.* Renown.

534 R. N.—LT.-COL. A. T. MILLER, The Paddocks, Copmanthorpe, York, for **Reveillee**, bay gelding, foaled in 1914.

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[1] Champion Silver Medal given by the Shetland Pony Stud Book Society for the best Shetland Pony in Classes 87 and 88.

[2] Prizes offered by the Darlington Local Committee.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 92.—*Hunter Mares or Geldings, foaled in or before* 1916, *up to more than* 14 *stones.* [14 entries.]

548 **I.** (£15, & R. N. for Champion.[1])—THE COUNTESS OF CHESTERFIELD, Beningbrough Hall, York, for **The Clown**, chestnut gelding, foaled in 1913.
550 **II.** (£10.)—NORMAN FIELD, Lartington Hall, Darlington, for **Bill Murphy**, bay gelding, foaled in 1913
523 **III.** (£5.)—GEOFF KENYON, Plainville, Haxby, York, for **White Heart**, chestnut gelding, foaled in 1915.
535 **IV.** (£3.)—WILLIAM BARKER BROWN, for **The Joker** [*see Class* 90.]
531 **R. N.**—ARTHUR C. STRAKER, High Warden, Hexham, for **Ballymount**.
H. C.—555. **C.**—538.

Class 93.—*Hunter Mares or Geldings, foaled in or before* 1916, *up to from* 12 *to* 13·7 *stones.* [14 entries.]

522 **I.** (£20.)—GEOFF KENYON, for **Pussyfoot** [*see Class* 91.]
576 **II.** (£15.)—JOHN DARBY, Hillmorton, Rugby, for **Starlight**, chestnut gelding, foaled in 1914
541 **III.** (£10.)—J. KENNETH STEVENSON, The Chase, Upper Welland, Malvern Wells, for **Fieldmint**, chestnut gelding, foaled in 1913, bred by W. Brown, Slingsby, Malton: *s.* Faeldsham, *d. by* Peppermint.
554 **IV.** (£5.)—LT.-COL. A. T. MILLER, for **Reveillee** [*see Class* 91.]
526 **V.** (£3.)—THOMAS H. ROBSON, for **Top Hole** [*see Class* 91.]
578 **R. N.**—JOHN DRAGE, Chapel Brampton, Northampton, for bay gelding.

Class 94.—*Hunter Mares or Geldings, foaled in or before* 1916, *up to more than* 13·7 *and not more than* 15 *stones.* [22 entries.]

588 **I.** (£20, & Champion.[1])—GEN. SIR J. F. LAYCOCK, D.S.O., Wiseton, Bawtry S.O. for **Brigadier**, chestnut gelding, foaled in 1912.
548 **II.** (£15.)—THE COUNTESS OF CHESTERFIELD, for **The Clown** [*see Class* 92.]
569 **III.** (£10.)—MAJOR H. FAUDEL-PHILLIPS, Moor Hall Stud, Cookham, Berks, for **Liffey Bank**, chestnut gelding, foaled in 1914, bred by the Earl of Kenmare, Ireland; *s.* Jeans Cap, *d.* Prima Donna *by* Scene Shifter.
550 **IV.** (£5.)—NORMAN FIELD, for **Bill Murphy** [*see Class* 92.]
523 **V.** (£3.)—GEOFF KENYON, for **White Heart** [*see Class* 92.]
568 **R. N.**—MAJOR H. FAUDEL-PHILLIPS, for **Gentleman Joe**.

Class 95.—*Hunter Mares or Geldings, foaled in or before* 1916, *up to more than* 15 *stones.* [9 entries.]

584 **I.** (£20.)—MRS. J. PUTNAM, Farringdon House, Exeter, for **Farringdon**, dark brown gelding, foaled in 1912.
580 **II.** (£15.)—JOHN DRAGE, Chapel Brampton, Northampton, for **The Clipper**, chestnut gelding, foaled in 1913
595 **III.** (£10.)—BARONESS BURTON, Dochfour, Inverness, for **Captain**, chestnut gelding, foaled in 1914.
596 **IV.** (£5.)—B. DAVIES, Yeaton, Baschurch, Salop. for **Tenby**, bay gelding, foaled in 1915.
563 **V.** (£3.)—JOHN CLAY, Wooler, Northumberland, for **Godfrey**, brown gelding, foaled in 1911.
598 **R. N.**—VINCENT V. DAVIES, Birchdale, Stockton Heath, Warrington, for **First Flight 2nd**, chestnut gelding, foaled in 1914.

Hacks or Riding Ponies.

(To be ridden.)

Class 96.—*Mares or Geldings, not exceeding* 10·2 *hands. To be ridden by children born in or after* 1911. [6 entries.]

599 **I.** (£10.)—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, for **Squeaker**, brown gelding, foaled in 1916; *s.* Grove Fidler 564, *d.* Little Dorrit 731.
605 **II.** (£5.)—MASTER JOSE SHEPHERD, 20 Parkside, Knightsbridge, London, for **Sanjacento**, black and white gelding, foaled in 1916, bred by Senor S. J. Ungue, Buenos Aires.
606 **III.** (£3.)—JOSEPH TOWNSON, Morton Tinmouth, Heighington, Darlington, for **Pretty Polly**, black mare, foaled in 1917, bred by John Rigg, Windermere.
607 **R. N.**—PETER VAUX, Brittenby Manor, Barton, Darlington, for **Tiny**, brown mare, foaled in 1916.

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[1] Gold Challenge Cup value Fifty Guineas given by gentlemen interested in Hunters, for the best Mare or Gelding in Classes 89-95.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 97.—*Mares or Geldings, over* 10·2 *and not exceeding* 12·2 *hands. To be ridden by children born in or after* 1908. [3 entries.]

600 I. (£10.)—Mrs. Philip Hunloke, Wingerworth Hall, Chesterfield, for **Pop Gun**, grey gelding, foaled in 1916.

610 II. (£5.)—M. Morland, 71 Osborne Avenue, Newcastle-on-Tyne, for **Little Hero**, brown gelding, foaled in 1916; *s* Successful 8314.

Class 98.—*Mares or Geldings, over* 12·2 *and not exceeding* 14 *hands. To be ridden by children born in or after* 1906. [7 entries.]

601 I. (£10.)—Mrs. Philip Hunloke, Wingerworth Hall, Chesterfield, for **Rumpelstiltskin**, brown gelding, foaled in 1910.

602 II. (£5.)—Mrs. Philip Hunloke, for **Sonia**, bay mare, foaled in 1915.

612 III. (£3.)—W. W. Burdon, Hartford House, Bedlington, Northumberland, for **Irish Light**, chestnut gelding, foaled in 1916.

598 R. N.—R. Charles Reed, The Chilterns, Bourne End, Bucks, for **Queenie**, chestnut mare, foaled in 1915, bred by J. Byrne, Prospect, Milltown, Dublin; *s.* Clarionet, *d. by* Hackler.

H. C.—597.

Class 99.—*Mares or Geldings, over* 14 *and not exceeding* 15 *hands.* [12 entries.]

571 I. (£10, & Champion.[1])—Major H. Faudel-Phillips, Moor Hall Stud, Cookham, Berks, for **Tarantella**, chestnut mare.

604 II. (£5, & R. N. for Champion.[1])—Mrs. Philip Hunloke, Wingerworth Hall, Chesterfield, for **Sillabub**, chestnut mare, foaled in 1916, bred by Miss Calmady Hamlyn, Bidlake Vean, Bridestowe; *s.* Barbed Fence, *d.* Juncket 1252.

566 III. (£3.)—Mrs. Harper, Dalton Terrace, The Mount, York, for **Nicolette**, chestnut mare, foaled in 1915, bred by H. Parker, Yealand Conyers, Carnforth; *s.* Hon. Jummy, *d by* Ellison.

615 R. N.—Capt. W. P. Jeffcock, Cwmcarvan Court, Monmouth, for **Bicester**.

H.C.—619.

Class 100.—*Mares or Geldings, over* 15 *hands.* [11 entries.]

536 I. (£10.)—William Barker Brown, South Holme, Slingsby, Malton, for **Joy Ride**, brown mare, foaled in 1916, bred by M. Humphrey, Kingthorpe, Pickering; *s.* Jovial.

561 II. (£5.)—Ernest Bradley, Newton Grange, Great Ayton, for **Peacock**, bay gelding, foaled in 1915, bred by Sir Arthur Dorman, Grey Towers, Nunthorpe; *s.* Lord of the Valley, *d. by* Dromanby.

616 III. (£3.)—Capt. W. J. Jeffcock, Cwmcarvan Court, Monmouth, for **Freedom 5224**, bay mare, foaled in 1912, bred by F. E. Bowser, Wigtoft, Boston, Lincs.; *s.* Splendour, *d.* Snowdrop 3rd 4434.

558 R. N.—Col. The Hon. Guy Wilson, Stannick Park, Darlington, for **Billy**.

Driving Classes.[2]

SINGLE HARNESS.

Class 101—*Harness Mares or Geldings, not exceeding* 13·2 *hands.* [7 entries.]

626 I. (£10.)—Mrs. van Nievelt van Hattum, Holland Stud, Camilla Lacey, West Humble, Dorking, for **Naughty Fire G 25**, bay gelding, foaled in 1913, bred by H. Le Marchant, Elmwood, East Croydon; *s.* Torchfire 9472, *d.* Naughty Naiad *by* Berkeley Model.

638 II. (£5.)—W. W. Bourne, Garston Manor, Watford, Herts., for **Bricket Fire 12112**, dark bay gelding, foaled in 1910, bred by the late W. Cliff, Melbourne Hall, York; *s.* Royal Success, *d.* Wortley Belle 14873 *by* Sir Horace 5402.

624 III. (£5.)—J. W. G Smith, Aysgarth S.O., Yorks, for **Glen Melbourne 24227**, bay mare, foaled in 1915, bred by the late W. Cliff, Melbourne Hall, York; *s.* Squire Melbourne 12167, *d.* Glenavon Eclipse 22556 *by* Torchfire 9472.

623 IV. (£3)—T. Goldsbrough, Stokesley S.O., Yorks., for **Fiery Belle 24212**, brown mare, foaled in 1915, bred by A. J. Willett, Warrington; *s.* Torchfire 9472, *d.* Fire Belle 20668 *by* Fire Boy 7440.

610 R. N.—M. Morland, 71 Osborne Avenue, Newcastle-on-Tyne, for **Little Hero**.

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[1] Gold Challenge Cup, value Fifty Guineas, given by gentlemen interested in Hacks and Riding Ponies for the best Animal in Classes 96-100.

[2] Prizes given by the Darlington Local Committee.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 102.—*Harness Mares or Geldings, over* 13·2 *and not exceeding* 14 *hands.*

[5 entries.]

639 **(£10, R.N. for Champion[1] & G.M.[2])**—W. W. BOURNE, Garston Manor, Watford, Herts., for **Bricket Fame** 11509, bay gelding, foaled in 1909, bred by the late W. Cliff, Melbourne Hall, York ; *s* Royal Success, *d.* Wortley Belle 14873 *by* Sir Horace 5402.

635 **II. (£5.)**—WILLIAM S. MILLER, Balmanno Castle, Bridge of Earn, for **Sir Eric**, dark bay gelding, foaled in 1916, bred by the late W. Cliff, Melbourne Hall, York ; *s.* Royal Success 8995, *d.* Wortley Belle 14873 *by* Sir Horace 5402.

641 **III. (£5.)**—THOMAS EVANS, Berkely, St. James Garden, Swansea, for **Melbourne Wonder** G 74, dark brown gelding, foaled in 1915, bred by the late W. Cliff, Melbourne Hall, York ; *s.* Melbourne Hall 11510, *d.* Myra Melbourne 23259 *by* Successful 8314.

627 **IV. (£3.)**—MRS. VAN NIEVELT VAN HATTUM, Holland Stud, Camilla Lacey, West Humble, Dorking, for **Fire Girl**, brown mare, foaled in 1918, bred by H. Le Marchant, Elmwood, East Croydon ; *s.* Torchfire 9472, *d.* Silvery Whitney.

642 **R. N.**—C. F. KENYON, Steele, Whitchurch, Salop, for **Buckley Searchlight.**

Class 103.—*Harness Mares or Geldings, over* 14 *and not exceeding* 15 *hands.*

[9 entries.]

656 **I. (£10.)**—MRS JAMES PUTNAM, Farringdon House, Exeter, for **Park Carnation** 22717, brown mare, foaled in 1907, bred by W. Bellamy, Wimblington ; *s.* Luath 9323, *d.* Park Sunshine 22733 *by* Lord Dundreary 7907.

636 **II. (£5.)**—WILLIAM S MILLER, Balmanno Castle, Bridge of Earn, for **V.C.**, dark brown gelding, foaled in 1915, bred by Robert Scott, Thornholme, Carluke ; *s.* Mathias 6473, *d.* Golden Glow 20687 *by* Mathias 6473.

659 **III. (£5.)**—HENRY GILDING, Gateacre, Liverpool, for **Glenavon Trixie** 24508, chestnut mare, foaled in 1916, bred by Enoch Glen Kaim Park, Bathgate ; *s.* Mathias 6473, *d.* Heathwood Caprice 23982 *by* Westfield Polonius 9968.

640 **IV. (£3.)**—W. W. BOURNE, Garston Manor, Watford, Herts., for **Garston Madge** 23946, brown roan mare, foaled in 1914, bred by G Cobb, Garston, Watford ; *s.* Leopard 9783, *d.* Brompton Princess 8707 *by* Garton Duke 3009.

614 **V. (£3.)**—F. ARMSTRONG, George Hotel, Penrith, for **Duncrieve Sapho** 23527, dark chestnut mare, foaled in 1913, bred by J. W. M. Adamson, Duncrieve, Perthshire : *s.* Hopwood Viceroy 9280, *d.* Terrington Saph na 1699.

618 **R. N.**—JOSEPH WILLIS, Eldon Street, Darlington for **Angram Princess.**

Class 104.—*Harness Mares or Geldings, over* 15 *and not exceeding* 15·2 *hands.*

[11 entries.]

654 **I. (£10, & Champion.[1])**—ROBERT BLACK, The Grove, Osbaldwick, York, for **Field Marshal** G. 107, brown gelding, foaled in 1913, bred by J. E. Kerr, Harviestoun Castle, Dollar ; *s.* Mathias 6473, *d.* Terrington Starlight 16258 *by* Goldfinder 1791.

628 **II. (£5.)**—MRS. VAN NIEVELT VAN HATTUM, Holland Stud, Camille Lacey, West Humble, Dorking, for **Dark Legend** G. 104, chestnut gelding, foaled in 1918, bred by D. A. Engel, Hemlington Park, Marton, S.O., Yorks. ; *s.* Mathias 6473, *d.* Hemlington Fairplay *by* Hopwood Viceroy 9280.

637 **III. (£5.)**—WILLIAM S MILLER, Balmanno Castle, Bridge of Earn, for **Knight Commander**, chestnut gelding, foaled in 1913, bred by Mrs E. Rodgers, Bridgelands, Selkirk ; *s.* Mathias 6473, *d.* Bridgelands La Capite *by* Blaze 2nd 2376

653 **IV. (£3.)**—JOSEPH SMITH, 36 Victoria Road East, Leicester, for **Leicester Princess** 24544, dark chestnut mare, foaled in 1916, bred by J. O. Nicol, London Road, Leicester ; *s.* Mathias 6743, *d.* Westfield Surprise 21744 *by* Paddock Polonius 7208.

Class 105.—*Harness Mares or Geldings over* 15·2 *hands.*

[5 entries.]

646 **I. (£10.)**—CAPT. BERTRAM W. MILLS, Redhill Farm, Edgware, Middlesex, for **Edgware Princess**, chestnut mare, foaled in 1914, bred by Capt. Horace P. Waters, Baysham Court, Ross ; *s.* Chepstow Cardinal 9047, *d.* Blaisdon Victoria 12473 *by* Goldfinder 6th 1791.

655 **II. (£5.)**—ROBERT BLACK, The Grove, Osbaldwick, York, for **Nancy E.** 24329, chestnut mare, foaled in 1914, bred by D. A. Engel, Hemlington Park, Marton, Yorks ; *s.* King's Proctor 11102, *d.* Hemlington Fairplay 21324 *by* Hopwood Viceroy 9280.

625 **III. (£5.)**—J. W. G SMITH, Aysgarth, S.O., Yorks, for **Towthorpe Allette** 23375, chestnut mare, foaled in 1912, bred by Robert Whitworth, Market Weighton ; *s* Polonius 3931, *d* Black Pearl 10704 *by* Fireaway of Callis Wold 1483.

645 **IV. (£3.)** CAPT. BERTRAM W. MILLS, for **Black Vogue** G. 641, black gelding, foaled in 1912, bred by James Prentice, Carolside, Uddingston ; *s.* Mathias 6473, *d.* Inverness Duchess of Connaught 15192 *by* Garton Duke of Connaught 3009.

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[1] Gold Challenge Cup, value Fifty Guineas, given for the best Animal in Classes 101-105.

[2] Champion Gold Medal, given by the Hackney Horse Society for the best Mare or Gelding in Classes 101-105, the produce of a registered Hackney Stallion.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

DOUBLE HARNESS.

Class 106.—*Pairs of Harness Mares or Geldings.* [8 entries.]

645 & 647 I. (£10, & Champion.[1])—CAPT. BERTRAM W. MILLS, Redhill Farm, Edgware, for **Black Vogue** (see Class 105); and **Grand Viscount**, black gelding, foaled in 1906, bred by Gavin Ross, Dykehead, Chapeltown; *s* Mathias 6473, *d.* Maid of Honour 1245 *by* Confidence 163

666 & 667 II. (£5, & R. N. for Champion.[1])—SIR JAMES BUCHANAN, BT., Lavington Park, Petworth, Sussex, for **Cadogan Sensation**, chestnut gelding; and **Cadogan Flower Girl**, chestnut mare.

672 & 673 III. (£5.)—CAPT. BERTRAM W. MILLS, for **Edgware Marlborough**, black gelding, foaled in 1915, bred by W. H. Moore, Seaton Hackney Farm, Morristown, New York; *s.* Marlborough 11136, *d.* Dainty Kate 19033 *by* Grandmaster 2nd 7230: and **Edgware Peacock**, black gelding foaled in 1913, bred by J. W. Peacock, The Lilacs, Hockwold; *s.* Antonius 10559, *d.* Hockwold Port 11898 *by* Best Fashion 4637.

TANDEMS.

Class 107.—*Pairs of Harness Mares or Geldings.* [5 entries.]

661 & 663 I. (£10, & Champion.[2])—MISS SYLVIA BROCKLEBANK, Wing Grange, Oakham, for **Illumination**, bay gelding, foaled in 1906, bred by Rt. Hon. Frederick Wrench, Killacoona, Ballybrack, Co. Dublin; and **Optimistic**, grey gelding, foaled in 1905, bred by H. M. Davey, Maesmynan Hall, Afonwen; *s.* Kassimede 8207

645 & 647 II. (£5, & R. N. for Champion.[2])—CAPT. BERTRAM W. MILLS, Redhill Farm, Edgware, for **Black Vogue** (see Class 105); and **Grand Viscount** (see Class 106).

Four-in-Hand Teams.

Class 108.—*Mares or Geldings.* (*To be shown before a Coach.*) [4 entries.]

649 I. (£20, & Champion.[3])—CAPT. BERTRAM W. MILLS, Redhill Farm, Edgware, for four blacks.

671 II. (£15.)—SIR JAMES BUCHANAN, BT., Lavington Park, Petworth, for four chestnuts.

664 III. (£10.)—MISS SYLVIA BROCKLEBANK, Wing Grange, Oakham, for four bays.

Pit Ponies.[4]

Which have been working in the Pits since January 1 *and up to May* 31, 1920. *To be shown without tubs, in ordinary gears* (*not decorated*), *which have been in use since January* 1, 1920.

Class 109.—*Two Ponies, not exceeding* 11 *hands.* [8 entries.]

678 I. (£10.)—BOLCKOW, VAUGHAN & COMPANY, LTD., Shildon Lodge Colliery, Middlesbrough-on-Tees, for **Quaker**, roan stallion, and **Briton**, black stallion.

683 II. (£5.)—NORTH BRANCEPETH COAL COMPANY, LTD., Littleburn Colliery, Durham, for **Jolly**, brown, foaled in 1914, and **Jock**, black, foaled in 1914.

680 III. (£3.)—LAMBTON & HETTON COLLIERIES, LTD., Lyons Office, Hetton-le-Hole, for **Mousy**, black, and **Pop**, black.

Class 110.—*Two Ponies, over* 11 *and not exceeding* 12·2 *hands.* [8 entries.]

689 I. (£10.)—LAMBTON AND HETTON COLLIERIES, LTD., Lyons Office, Hetton-le-Hole, for **Pop**, bay, and **Lofty**, brown.

684 II. (£5.)—BOLCKOW, VAUGHAN & COMPANY, LTD., Shildon Lodge Colliery, Middlesbrough-on-Tees, for **Hussar**, brown stallion, and **Robin**, chestnut gelding.

691 III. (£3.)—SIR B. SAMUELSON & COMPANY, LTD., Littletown, Durham, for **Chancey**, chestnut, and **Roger**, bay.

685 R.N.—BOLCKOW, VAUGHAN & COMPANY, LTD., for **Salter** and **Postman**.

Agricultural Horses.[4]

Class 111.—*Gelding, foaled in or before* 1917. [5 entries.]

65 I. (£10.)—EDMUND PARKER, Ledston Mill, Castleford, Yorks., for **Prince** (*see Class* 11).

139 II. (£5.)—D. D. MURRAY, The Dene, Seaham Harbour, for **Jock** brown, foaled in 1915, bred by M. Atkinson, West Auckland; *s.* Pride of the North 17419.

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[1] Gold Challenge Cup, value Fifty Guineas, given by two members of the R.A.S.E., for the best Pair in Class 106.

[2] Gold Challenge Cup, value Fifty Guineas, given by a member of the R.A.S.E., for the best Tandem in Class 107.

[3] Gold Challenge Cup, value Fifty Guineas, given by a member of the R.A.S.E., for the best Team in Class 108.

[4] Prizes given by the Darlington Local Committee.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

693 III. (£3)—THOMAS FINLEY, Harperley, S.O., co. Durham, for **Harperley Major**, bay Clydesdale, foaled in 1916, bred by William Kirkland, Lockend, Coylton, Ayr; *s.* Dunure Footprint 15203, *d.* Lockend Beauty 23883.

692 R. N.—ERNEST SHERWIN Rand Grange Farm, Bedale, for **Rand Royal**, brown Shire, foaled in 1917 bred by W. Atkinson, Bubwith; *s.* Derwen Forester.

Class 112.—*Geldings, foaled in* 1918. [4 entries.]

698 I. (£10.)—W. F. PINKNEY, Stubb House, Northallerton, for **Northallerton Dread None**, bay Shire; *s.* Grange Nonsuch 32393, *d.* Northallerton Victoria 68040 *by* Owston Tom 22064.

697 II. (£5.)—WILLIAM F. LAX, Carlton Grange, Aldbrough, Darlington, for bay Shire; *s.* Bramhope Nestor.

696 III. (£3.)—ALBERT BUCKLE, Morton Carr, Nunthorpe, for black; *s.* Royal Master *d. by* Hillhead Chieftain.

695 R. N.—ALBERT BUCKLE, for black: *s.* Royal Master, *d. by* Lord Lonsdale.

Class 113.—*Colts or Fillies, foaled in* 1919. [8 entries.]

703 I. (£10.)—W. F. PINKNEY, Stubb House, Northallerton, for **Northallerton Girlie**, bay Shire filly; *s.* Great Eastern Harold 32396, *d.* Northallerton Victoria 68040 *by* Owston Tom 22664.

704 II. (£5.)—T. W. STEPHENSON, Denton Grange, Heighington, Co. Durham, for **Denton Dorcus**, brown Clydesdale filly; *s.* Dunure Efficiency 19100, *d.* Cowton Dora 39855.

Class 114.—*Fillies foaled in* 1918. [5 entries.]

117 I. (£10.)—D. D. MURRAY, The Dene, Seaham Harbour, for **Seaham Ideal**, brown; *s.* Auchenflower 12007, *d.* Bent Baroness 24095 *by* Baron of Buchlyvie 11263.

706 II. (£5.)—GEORGE LAX, Laylands, Scorton, Darlington, for **Flash**, brown Shire; *s.* Thorndale Samson 34386.

705 III. (£3.)—ALBERT BLACKETT, Prospect Farm, Yarm Road, Darlington, for **Annie Laurie**, brown Clydesdale, bred by Thomas Petch, Great Ayton, Yorks.; *s.* Lord Howard 14240, *d. by* Hammish Mohum 10355.

Class 115.—*Mares (with Foals at foot) foaled in or before* 1917. [4 entries.]

138 I. (£10.)—D. D. MURRAY, The Dene, Seaham Harbour, for **Queen o' the Ring** (see Class 19).

707 II. (£5.)—THOMAS FINLEY, Harperley, S.O., Co. Durham, for **Harperley Rusk**, bay Clydesdale, foaled in 1916; *s.* Treasure 18143, *d.* Rusk 18271 *by* Sir Hugo 10924, [Foal *by* Apukwa 14567.]

708 III. (£3.)—THOMAS FINLEY, for **Jargonelle of Rachan**, black Clydesdale, foaled in 1916, bred by S. Mitchell, Boquhan, Kippen Station; *s.* Dunure Footprint 15203, *d.* Boquhan Lady Breada 37853 *by* Oyama 13118. [Foal by Apukwa 14867.]

Trade Turnouts.[1]

Class 116.—*Heavy Draught Mares or Geldings, having been worked by a Farmer, Trader, Railway Company, or Corporation, for not less than three months immediately prior to the date of the Show.* [1 entry.]

139 I. (£10.)—D. D. MURRAY, The Dene, Seaham Harbour, for **Jock** (see Class 111.)

Class 117.—*Teams of Two Heavy Draught Mares or Geldings having been worked by a Farmer, Trader, Railway Company, or Corporation, for not less than three months immediately prior to the date of the Show.* [No entry.]

Class 118.—*Vanner Mares or Geldings, suitable for and having been worked by a Farmer or Tradesman for not less than three months immediately prior to the date of the Show, and regularly driven by the owner or his servants for the delivery of goods.* [1 entry.]

711 I. (£10.)—A. J. RAMSHAY, East Appleton, Catterick, for **Bonnie**, dark brown, foaled in 1914; *s.* Trup Rival, *d.* Beauty.

Class 119.—*Light Mares or Geldings, suitable for and having been worked by a Farmer or Tradesman for not less than three months immediately prior to the date of the Show, and regularly driven by the owner or his servants for the delivery of his goods.* [3 entries.]

712 I. (£10.)—ROBERT BARKER, Woodlands Road, Darlington, for **Chocolate King**, chestnut gelding, foaled in 1915.

714 II. (£5.)—JOSEPH WILLIS, Eldon Street, Darlington, for **Angram Majesty's Princess**, bay mare, foaled in 1905, bred by Mrs Fletcher & Sons, Angram, York.

713 III. (£3.)—ROBERT BARKER, for **Storm King**, chestnut gelding, foaled in 1912.

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[1] Prizes given by the Darlington Local Committee.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

JUMPING COMPETITIONS.[1]

Class A.—*Mares or Geldings.* [17 entries.]

2 I. (£20.)—FRANK ALLISON, West Farm, Selby, for Temptress.
3 { Equal Prize } F. W. FOSTER, Marsh Farm, Etwall, Derby, for Byplane.
14 { of £7 10s } ERNEST BRADLEY, Newton Grange, Great Ayton, for brown gelding.
13 IV. (£3.)—T. E. WHITTINGHAM, Byrkley Street, Burton-on-Trent, for John B.
17 V. (£3.)—S. W. WOODHALL, Wellington, Salop, for Tip Top.

Class B.—*Mares or Geldings.* [16 entries.]

6 I. (£15.)—T. E. WHITTINGHAM, Byrkley Street, Burton-on-Trent, for John B.
14 II. (£10.)—ERNEST BRADLEY, Newton Grange, Great Ayton, for Spider.
15 III. (£5.)—F. W. FOSTER, Marsh Farm, Etwall, Derby, for Comet.
7 IV. (£3.)—ERNEST BRADLEY, for Little Wonder.
16 V. (£3.)—J. NORBURY, Heathside, Knutsford, for Peacock.

Class C.—*Mares or Geldings.* [16 entries.]

3 I. (£10.)—F. W. FOSTER, Marsh Farm, Etwall, Derby, for Comet.
6 II. (£5.)—F. W. FOSTER, for Byplane.
8 III. (£5.)—S. W. WOODHALL, Wellington, Salop, for Tip Top.
2 IV. (£3.)—J. NORBURY, Heathside, Knutsford, for Peacock.
15 V. (£3.)—W. H. WELLBURN, Water Fryston, Ferrybridge, for Mustard.

Class D.—*Ponies, not exceeding* 14·2 *hands.* [6 entries.]

6 I. (£10.)—J. NORBURY, Heathside, Knutsford, for Peacock.
3 II. (£5.)—THOMAS & HENRY WARD, Almsford Bank, Leeds Road, Harrogate, for Fisherman.
4 III. (£3.)—H. BROWN, Westbourne House, Westbourne Road, West Hartlepool.

Class E.—*Champion Class. Mares or Geldings.* [17 entries.]

13 I. (£20.)—FRANK ALLISON, West Farm, Selby, for Temptress.
4 II. (£10.)—F. W. FOSTER, Marsh Farm, Etwall, Derby, for Comet.
8 III. (£5).—S. W. WOODHALL, Wellington, Salop, for Tip Top.
11 IV. (£3.)—ERNEST BRADLEY, Newton Grange, Great Ayton, for Little Wonder.
5 V. (£3.)—J. NORBURY, Heathside, Knutsford, for Peacock.

CATTLE.

Shorthorns.[2]

Class 120.—*Shorthorn Bulls, calved in or before* 1917. [11 entries.]

721 I. (£10, & Champion.[3])—OLIVER W. PORRITT, Hotchley Farm, East Leake, Loughborough, for Sanquhar Grand Courtier 139193, red, born May 3, 1916, bred by Messrs. Law, Mains of Sanquhar, Forres; *s.* Collynie Grand Knight 119549, *d.* Sanquhar Rachel *by* Hawthorn Champion 99098.

717 II. (£5, & R. N. for Champion.[3])—GEORGE HARRISON, Gainford Hall, Darlington, for Ruler 139156, red roan, born March 24, 1916, bred by Major E. G. S. Hornby, Dalton Hall, Burton, Westmoreland; *s.* Mountaineer 121693, *d.* Dalton Rosemary 3rd *by* Commander 105091.

720 III. (£3.)—ALBERT JAMES MARSHALL, Bridgebank, Stranraer, for Pellipar Iris 144396, roan, born Feb. 19, 1917, bred by Lieut-Col. R. J. L. Ogilby, Pellipar House, Dungiven, Co. Derry: *s.* Edgcote Regalia 125396, *d.* Pellipar Pansy *by* Count Crystal 108276.

715 IV. (£2.)—H.M. THE KING, The Royal Farms, Windsor, for Windsor Norseman 134385, red, born Nov. 28, 1915; *s.* Notlaw Boxer 127158, *d.* Nonpareil 54th *by* Mastodon 102989.

724 R. N.—WALTER SPURR, Wexham, Anderby, Alford, Lincs., for Kingston's Heir.
H.C.—723.

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[1] Prizes given by the Darlington Local Committee.

[2] £80 towards these Prizes were given by the Shorthorn Society.

[3] Champion Prize of £20 given by the Shorthorn Society, for the best Bull in Classes 120-124. A Silver Medal is given by the Shorthorn Society to the Breeder of the Champion Bull.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 121.—*Shorthorn Bulls, calved on or between January* 1, 1918, *and March* 31, 1918. [12 entries.]

735 I. (£10.)—THE DUKE OF NORTHUMBERLAND, Alnwick Castle, Northumberland, for **Ducal Favourite**, white, born March 9; *s.* Aldsworth Duke 123844, *d.* Favourite Rosebud (vol. 56, p. 924) *by* Alnwick Favourite 90653.

726 II. (£5.)—H.R.H. THE PRINCE OF WALES, K.G., Stoke Climsland, Cornwall, for **Christian King** 147906, red roan, born Jan. 19; *s.* Butterfly Knight 130029, *d.* Adbolton Rosy Queen *by* King Christian of Denmark 86316.

731 III. (£3.)—C. E. GUNTHER, Tongswood, Hawkhurst, Kent, for **Tongswood Helpmate**, roan, born March 1; *s.* Knight Lavender 121046, *d.* Tongswood Helena (vol. 58, p. 606) *by* Lord Augustus 109216.

736 IV. (£2.)—F. B. WILKINSON, Cavendish Lodge, Edwinstowe, Newark, for **Peace and Plenty**, roan, born Feb. 2, bred by J. W. Whittome; *s.* Jack-a-Dandy 131610, *d.* Miss Julia *by* Stand Firm 93524.

728 R. N.—DAVID THOMAS DYKE, Lower Slaughter, R.S.O., Gloucestershire, for **Slaughter Goldsmith**.
H.C.—727. C.—732.

Class 122.—*Shorthorn Bulls, calved on or between April* 1, 1918, *and December* 31, 1918. [23 entries.]

751 I. (£10.)—ALBERT JAMES MARSHALL, Bridgebank, Stranraer, for **Inschfield Clipper King**, roan, born May 16, bred by G. A. Bruce, Inschfield, Insch, Aberdeenshire; *s.* Vulcan of Naemoor 134187, *d.* Crewe Clipper 2nd (vol. 61, p. 685) *by* Bold Butterfly 114395.

743 II. (£5.)—MAJOR CLIVE BEHRENS, Swinton Grange, Malton, Yorks., for **Swinton Rosicrucian 2nd**, roan, born April 4; *s.* Swinton Royal Blood 133860, *d.* Gainford Rosebud 3rd (vol. 60, p. 311) *by* Golden Fortune 111922.

757 III. (£3.)—F. B. WILKINSON, Cavendish Lodge, Edwinstowe, Newark, for **Golden Sceptre**, roan, born April 14, bred by A. Crombie, Woodend, Newmachar; *s.* Brave Marquis 119158, *d.* Broadhooks Queen 8th (vol. 60, p. 636) *by* Quick Hope 92986.

755 IV. (£2.)—EDWARD SMITH, 107 Bransford Road, Worcester, for **Farmhill Mariner**, roan, born April 22, bred by J. B. Henderson, Farmhill, Coagh, Ireland; *s.* Royal Mariner 139085, *d.* Lawton Dorothy 2nd (vol. 63, p. 335) *by* Dunglass Chieftain 115188.

759 V. (£2.)—F. B. WILKINSON, for **Shenley White Ensign**, white, born Aug. 1, bred by C. F. Raphael, Porters Lodge, Shenley; *s.* Edgcote Brigade Major 130815, *d.* Golden Necklace (vol. 60, p. 1033) *by* Bachelor of Arts 101330.

745 R.N.—S. F. EDGE, Gallops Homestead, Ditchling, Sussex, for **Vahan Monarch**.
H. C.—752, 754. C.—741.

Class 123.—*Shorthorn Bulls, calved on or between January* 1, 1919, *and March* 31, 1919. [29 entries.]

785 I. (£10.)—J. M. STRICKLAND, Bainesse, Catterick, Yorks., for **Brandsby Undine King**, dark roan, born Jan. 18; *s.* Millhills Rothes King 138020, *d.* Brandsby's Lady Undine 3rd (vol. 62, p. 1118) *by* Brandsby's Aristocrat 4th 114422.

773 II. (£5, & Special I.[1])—GEORGE HARRISON, Gainford Hall, Darlington, for **Count Broadhooks**, roan, born Feb. 25, bred by Reps. of the late Thomas Douglas, Rhynie, Fearn, Ross-shire; *s.* Red Knight 133028, *d.* Countess Broadhooks 2nd (vol. 62, p. 760) *by* Diamond Emperor 119867.

781 III. (£3.)—ALBERT JAMES MARSHALL, Bridgebank, Stranraer, for **Rothes King 4th**, roan, born Jan. 16, bred by Mrs. D. Stewart, Millhills, Crieff; *s.* Collynie Bright Star 130287, *d.* Queen of Millhills (vol. 63, p. 1171) *by* Collynie Cruickshank 105068.

761 IV. (£2.)—H.M. THE KING, The Royal Farms, Windsor, for **Windsor Matchless**, light roan, born Feb. 23; *s.* Windsor Archie 140189, *d.* Matilda 3rd (vol. 57, p. 415) *by* Golden Treasure 95346.

763 V. (£2.)—SIR RICHARD COOPER, BT., M.P., Billington Manor, Leighton Buzzard, for **Billington Augustus**, dark roan, born March 3; *s.* Hean Lancelot 142875, *d.* Shenstone Augusta *by* Macebearer 126603.

787 R. N.—THE HON. MRS. BRUCE WARD, Godinton, Ashford, Kent, for **Bilsington Golden Harvest**.
H. C.—779.

774 (Special II.[1])—GEORGE HARRISON, for **Gainford Premier**.

785 (Special I.[2])—J. M. STRICKLAND, for **Brandsby Undine King**.

831 (Special II.[2])—J. M. STRICKLAND, for **Brandsby's Lord Ramsden 6th**.

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[1] Two Special District Prizes were given, (I.) £10, by the Shorthorn Society, for the best Bull, (II.) £5, by the Durham Agricultural Society, for the second best Bull, in Classes 123 and 124, the property of Exhibitors residing in Co. Durham.

[2] Two Special District Prizes were given, (I.) £10, by the Shorthorn Society, for the best Bull, (II.) £5, by the Yorkshire Agricultural Society, for the second best Bull, in Classes 123 and 124, the property of Exhibitors residing in Yorkshire.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 124.—*Shorthorn Bulls, calved on or between April* 1, 1919, *and December* 31, 1919. [50 entries.]

803 **I.** (£10.)—SIR RICHARD COOPER, BT., M.P., Billington Manor, Leighton Buzzard, for **Billington Snowstorm**, white, born May 8; *s.* Scottie 133446, *d.* Gipsy Girlie (vol. 61, p. 1125) *by* Red Baron 112982.

791 **II.** (£5.)—H.R.H. THE PRINCE OF WALES, K.G., Stoke Climsland, Cornwall, for **Diamond Butterfly**, roan, born April 18; *s.* Butterfly Knight 130029, *d.* Miss Butterfly 5th (vol. 61, p. 619) *by* Leap Year 116201.

816 **III.** (£3.)—ALBERT JAMES MARSHALL, Bridgebank, Stranraer, for **Dandy Broadhooks**, roan, born April 1, bred by James A. Perry, Killane, Ahaghill, Co. Antrim; *s.* Rosewood's Emperor 145054, *d.* Killane Broadhooks 2nd (vol. 63, p. 1076) *by* Newton Renown 121779.

827 **IV.** (£2.)—WALTER MONTAGU SCOTT, Nether Swell Manor, Stow-on-the-Wold, Glos., for **Lavender Royal**, red, born April 9; *s.* Windsor Lad 113735, *d.* Hean Lavender 3rd (vol 62, p. 953) *by* Royal Roman 122652.

804 **V.** (£2.)—RICHARD CORNELIUS, Lutwyche Hall, Much Wenlock, Salop, for **Peace Day**, roan, born June 29; *s.* Edgcote Baronet 136355, *d* Lutwyche Rosewood (vol. 64, p. 819) *by* Hindley Bridegroom 131487.

792 **R. N.**—H.R.H. THE PRINCE OF WALES, K.G., for **Oberon**.
H.C.—795, 798. **C.**—799, 831.

726, 791, 792 **I.** (Special.[1])—H.R.H. THE PRINCE OF WALES, K.G., for **Christian King, Diamond Butterfly** and **Oberon**.

715, 761, 790 **II.** (Special.[1])—H.M. THE KING, for **Windsor Norseman, Windsor Matchless,** and **Windsor Royal Stamp**.

Class 125.—*Shorthorn Cows* (*in-milk*), *calved in or before* 1916. [7 entries.]

843 **I.** (£10, & Champion.[2])—W. M. CAZALET, Fairlawne, Tonbridge, for **Balnakyle Augusta 2nd** (vol. 63, p. 716), roan, born Dec. 20, 1916, calved Jan. 10, 1920, bred by J. Cameron, Balnakyle, Munlochy; *s.* Ossian of Cluny 121904, *d.* Balnakyle Augusta *by* Collynie Golden Stamp 114707.

841 **II.** (£5.)—JOHN BARNES, Aikbank, Wigton, Cumberland, for **Charlotte Queen**, (vol. 60, p. 614), light roan, born Feb. 17, 1913, calved Feb. 8, 1920, bred by John W. Barnes, Longthwaithe House, Wigton, Cumberland; *s.* Gainford Chieftain 105559, *d.* Charlotte Maid *by* Lord Ramsden 2nd 99461.

846 **III.** (£3.)—JOHN TAYLOR, Octon, Hunmanby, S.O., for **Settrington Fairy 3rd** (vol. 61, p. 769) white, born May 18, 1914, calved Jan. 17, 1920, bred by C. O. Hall, Settrington House, Malton; *s.* Vanity's Favourite 107358, *d.* Settrington Fairy *by* Nonpareil Fame 2nd 89425.

847 **R. N.**—THE HON. MRS. BRUCE WARD, Godinton, Ashford, Kent, for **Bilsington Lady Tarves 16th.**
C.—844.

Class 126.—*Shorthorn Heifers* (*in-milk*), *calved in* 1917. [6 entries.]

848 **I.** (£10.)—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury, for **Hardwicke Corday** (vol. 64, p. 726), red roan, born March 8, calved April 20, 1920; *s.* Favourite Rosewood 120227, *d.* Hardwicke Countess *by* Barteliver Trump 2nd 104716.

850 **II.** (£5.)—W. M. CAZALET, Fairlawne, Tonbridge, for **Garbity Princess Royal 4th** (vol. 64, p. 1095), red, born Dec. 2, calved May 25th, 1920, bred by James McWilliam, Garbity, Orton; *s.* Edgcote Flatterer 125374, *d.* Garbity Princess Royal 3rd *by* Golden Favourite 115592.

853 **III.** (£3.)—J. M. STRICKLAND, Bainesse, Catterick, Yorks., for **Heslerton Belle 16th** (vol. 64, p. 1310), roan, born April 18, calved May 10, 1920, bred by Thomas Campion, East Heslerton, York.; *s.* Doune Asterisk 130653, *d.* Heslerton Belle 11th *by* Allerston Rosarian 110742.

849 **R.N.**—GEORGE BRUDENELL, Deene Park, Peterborough, for **Miss Ramsden 9th.**

Class 127.—*Shorthorn Heifers, calved on or between January* 1, 1918, *and March* 31, 1918. [2 entries.]

855 **I.** (£10.)—WALTER MONTAGU SCOTT, Nether Swell Manor, Stow-on-the-Wold, Glos., for **Gay Lassie 13th**, white, born March 17; *s.* Windsor Lad 113735, *d.* Beatrice (vol. 60, p. 1059) *by* Primrose Star 106535.

854 **II.** (£5.)—THE DUKE OF NORTHUMBERLAND, Alnwick Castle, Northumberland, for **Queen Millicent**, roan, born Feb. 12; *s.* Aldsworth Duke 123844, *d.* Gladsome Millicent (vol. 57, p. 1019) *by* Star of Rothbury 104053.

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[1] Special Prizes of £15 First Prize, and £10 Second Prize, given for the best groups of three Bulls bred by Exhibitor in Classes 120-124.

£40 towards these Special Prizes ([1] & [3] p. lxxiv) were given by the Shorthorn Society.

[2] Champion Prize of £20 given by the Shorthorn Society for the best Cow or Heifer in Classes 125-130. A Silver Medal is given by the Shorthorn Society to the Breeder of the Champion Cow or Heifer.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 128.—*Shorthorn Heifers, calved on or between April* 1, 1918, *and December* 31, 1918. [16 entries.]

859 I. (£10, & **R. N. for Champion.**[1])—SIR RICHARD COOPER, BART., M.P., Billington Manor, Leighton Buzzard, for **Ruby Queen 6th**, white, Oct. 3; *s.* Scottie 133416, *d.* Ruby Queen 3rd (vol. 62, p. 721) *by* Beaufort Golden Gift 110972.

871 II. (£5.)—JOHN HENRY TOPPIN, Musgrave Hall, Skelton, Penrith, for **Mischief**, white, born Sept. 27; *s.* Masterkey 137896, *d.* Merrie Maid (vol. 55, p. 1209) *by* Baron Fitz Rosebud 94181.

862 III. (£3.)—JOSEPH HARRIS, Brackenburgh Tower, Carlisle, for **Water Lily 4th**, roan, born April 3; *s* Duke of Whitehall 136251, *d.* Water Lily 3rd (vol. 60, p. 810) *by* Oxford Duke of Calthwaite 54th, 116869.

870 IV. (£2.)—JOHN HENRY TOPPIN, for **Bright Princess**, roan, born May 16; *s.* Masterkey 137896, *d.* Bright Rose (vol 61, p. 1075) *by* Midshipman 121584.

863 **R. N.**—GEORGE HARRISON, Gainford Hall, Darlington, for **Gainford Marigold.**
H. C.—856. C.—861, 864.

Class 129.—*Shorthorn Heifers, calved on or between January* 1, 1919, *and March* 31, 1919. [24 entries.]

876 I. (£10.)—W. M. CAZALET, Fairlawne, Tonbridge, for **Princess Royal Cicely**, roan, born Feb. 3, bred by Sir Herbert Leon, Bart., Bletchley Park, Bletchley; *s.* Edgcote White Eagle 115264, *d.* Princess Royal Betty (vol. 59, p. 820) *by* Coming Storm 108242.

885 II. (£5.)—WILLIAM JOHN HOSKEN, Pulsack, Hayle, Cornwall, for **Manor Minorca**, roan, born March 14, bred by Arthur Hiscock, Manor France Farm, Blandford; *s.* Ascot Javelin 140510, *d.* Aikbank Minorca (vol. 59, p. 531) *by* Gainford Chieftain 103559.

881 III. (£3.)—GEORGE HARRISON, Gainford Hall, Darlington, for **Gainford Broadhooks 3rd**, roan, born Jan. 12; *s.* Ruler 139156, *d.* Collynie Broadhooks (vol. 61, p. 717) *by* Danesfield Storm King 94827.

877 IV. (£2.)—RICHARD CORNELIUS, Lutwyche Hall, Much Wenlock, Salop, for **Lutwyche Belle 2nd**, roan, born Jan. 28; *s.* Hindley Bridegroom 131487, *d.* Eastham Belle (vol. 59, p. 381) *by* Village Beau 87631.

893 V. (£2.)—THE HON. MRS. BRUCE WARD, Godinton, Ashford, Kent, for **Bilsington Rosebud 11th**, white, born Jan. 12th, bred by the Exors. of R. J. Balston, Bilsington Priory; *s.* Dewlaps Royal Sovereign 125170, *d.* Bilsington Rosebud 7th (vol. 62, p. 631) *by* Bilsington Archer 119025.

882 **R. N.**—GEORGE HARRISON, Gainford Hall, Darlington, for **Gainford Fairy Queen.**
H. C.—892. C.—875, 887.

Class 130.—*Shorthorn Heifers, calved on or between April* 1, 1919, *and December* 31, 1919. [25 entries.]

919 I. (£10.)—JOHN HENRY TOPPIN, Musgrave Hall, Skelton, Penrith, for **Bright Morn**, roan, born April 2; *s.* Masterkey 137896, *d.* Bright Pearl (vol. 60, p 1114) *by* Sanquhar Sentinel 110087.

899 II. (£5.)—W. M. CAZALET, Fairlawne, Tonbridge, for **Fairlawne Broadhooks 13th**, dark roan, born April 2; *s.* Collynie Clipper King 135816, *d.* Duchess Broadhooks 14th (vol. 59, p. 681) *by* Proud Warrior 106653.

915 III. (£3.)—EXORS. OF THE LATE W. E. PAIN, East Stratton, Micheldever Station, Hants, for **Marsh Marigold**, dark roan, born April 24; *s.* Windsor Elector 140197, *d.* Cotehay Marigold 2nd (vol. 64, p. 1168) *by* Bletchley Vizier 104822.

900 IV. (£2.)—W. M. CAZALET, for **Fairlawne Orange Blossom 4th**, dark roan, born April 30th; *s.* Collynie Clipper King 135816, *d.* Orange Twig (vol. 60, p. 746) *by* Sittyton Style 110212.
H. C.—901, 902, 905. C.—896, 908.

717, 863, 881, 882 Special.[2]—GEORGE HARRISON, for **Ruler, Gainford Marigold 4th, Gainford Broadhooks 3rd**, and **Gainford Fairy Queen.**

870, 871, 919 I. (Special.[3])—JOHN HENRY TOPPIN, for **Bright Princess, Mischief**, and **Bright Morn.**

859, 901, 902 II. (Special.[3])—SIR RICHARD COOPER, BART., M.P., for **Ruby Queen 6th, Billington Golden Drop 2nd**, and **Billington Ury.**

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[1] Champion Prize of £20 given by the Shorthorn Society for the best Cow or Heifer in Classes 125—130. A Silver Medal is given by the Shorthorn Society to the Breeder of the Champion Cow or Heifer.

[2] A Special Prize of £20 was given through the Darlington Local Committee for the best group, consisting of a Bull and three of his get of either sex in Classes 120-130. The Produce must be bred by the Exhibitor.

[3] A Special Prize of £15 First, and £10 Second, was given for the best group of three Cows or Heifers, bred by Exhibitor in Classes 125-130.

£40 towards these Special Prizes([1] p. lxxiii & [3]) were given by the Shorthorn Society

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Dairy Shorthorns.[1]

Class 131.—*Dairy Shorthorn Bulls, calved in or before* 1917. [12 entries.]

928 I. (£10, & Champion.[2])—ROBERT N. TORY, Anderson Manor Farm, Blandford, Dorset, for **Babraham Lord Price** 140574, roan, born Sept. 21 1917, bred by C. R. W. Adeane, Babraham Hall, Cambridge; *s.* Lord Lee 2nd 121257, *d.* Babraham Priceless *by* Dauntless 111497.

921 II. (£5 & R. N. for Champion.[2])—LORD ANNALY, Holdenby House, Northampton, for **Thornby Linksman** 145895, roan, born June 8, 1917, bred by Capt. A. S. Wills, Thornby Hall, Northampton; *s.* Drusus 115142, *d.* Dolphinlee Rosebud 8th *by* Dolphinlee Linksman 111546.

923 III. (£3.)—ITCHEN BREEDING STOCK FARM, LTD., Itchen Abbas, by Winchester for **Kelmscott Conjurer 3rd** 137269, red roan, born June 12, 1916, bred by R. W. Hobbs & Sons, Kelmscott, Lechlade, Glos.; *s.* Kelmscott Acrobat 4th 126217, *d.* Helpmate 15th *by* Kelmscott Tarquin 105853.

927 IV. (£2.)—MR. & MRS. STANTON, Snelston Hall, Ashbourne, Derbyshire, for **Snelston Royal** 145555, red and a little white, born Dec. 13th, 1917; *s.* Royal Barrington 122574, *d.* Roan Fern *by* Milton 96098.

930 R.N.—THE DUKE OF WESTMINSTER, Eaton Hall, Chester, for **Rockley Baron.**
H. C.—932. C.—924

Class 132.—*Dairy Shorthorn Bulls, calved in* 1918. [17 entries.]

940 I. (£10.)—E. EZRA, Lock, Partridge Green, Sussex, for **Proud Victor**, roan, born June 24, bred by H. A. Brown, Croft House, Grendon, Atherstone; *s.* Kelmscott Conjuror 2nd 137268 *d* Nottingham Princess (vol. 61, p. 906) *by* Lovely Chief 116363.

943 II. (£5.)—R. W. HOBBS & SONS, Kelmscott, Lechlade, Glos., for **Kelmscott Juggler 84th**, roan, born May 9; *s.* Trickster 4th 118058, *d.* Starlight 14th (vol. 58, p. 548) *by* Sheridan Beau 107101.

936 III. (£3.)—E. CAUDWELL, Rowsley, Derbyshire, for **Grendon Double Barrington**, light roan, born March 7, bred by H. A. Brown, Grendon, Atherstone; *s.* Barrington Snowstorm 2nd 124184, *d.* Barrington Welcome 2nd (vol. 59, p. 979) *by* Proud Waterloo 103785.

944 R. N.—LORD LILFORD, Lilford Hall, Barnwell, Peterborough, for **Lilford Dairyman.**
H. C.—949. C.—935, 941, 946.

Class 133.—*Dairy Shorthorn Bulls, calved on or between January* 1, 1919, *and March* 31, 1919. [12 entries.]

952 I. (£10.)—CHIVERS & SONS, LTD., Histon, Cambs, for **Histon Royal Prince**, dark roan, born March 11; *s.* Royal Foggathorpe 133300, *d.* Wild Queen 27th (vol. 59, p. 976) *by* Danger Signal 108337.

961 II. (£5.)—VISCOUNT WIMBORNE, Ashby St. Ledgers, Rugby, for **Golden Ray**, roan, born Jan. 16, bred by Capt. the Hon. E. A. FitzRoy, M.P., Fox Hill, West Haddon; *s.* Dandy 114984, *d.* Golden Maid (vol. 59, p. 532) *by* Golden Promise 102380.

960 III. (£3.)—JOHN A. WILLIS, Manor House, Carperby, Yorkshire, for **Royal Fern**, dark roan, born Feb. 2; *s.* Major Stanley 137799, *d.* Carleton Queen 7th (vol. 59, p. 1070) *by* Bright Minican 104872.

957 IV. (£2.)—LT.-COL. NORMAN PILKINGTON, D.S.O., Rainford Hall, St. Helens Lancs., for **Rainford Hall Mark**, red, born March 30; *s.* Rainford Richmond 144706 *d.* Rainford Harp 3rd (vol. 62, p. 1025) *by* Royal Prince 117511.

958 R. N.—R. SILCOCK & SONS, Thornton Hall Farm, Poulton-le-Fylde, Lancs., for **Fylde Referee 22nd.**
H. C.—953.

Class 134.—*Dairy Shorthorn Bulls, calved on or between April* 1, 1919, *and December* 31, 1919. [24 entries.]

968 I. (£10.)—SIR RICHARD C. GARTON, G.B.E., Lythe Hill, Haslemere, Surrey, for **Avisford Barrington Duke**, roan, born June 30 bred by E. C. Fairweather, Avisford Park, Arundel, Sussex; *s.* Apley Record Rosador 134633. *d.* Barrington Duchess 20th (vol. 58, p. 829) *by* Hadley Guardian 111968.

972 II. (£5.)—ALFRED PALMER, Wokefield Park, Mortimer, Berks, for **Wokefield Advocate**, red born May 23; *s.* Kelmscott Acrobat 22nd 143170, *d.* Lemon 26th (vol. 63, p. 899) *by* Cranford Freemason 114883.

971 III. (£3.)—OLYMPIA AGRICULTURAL COMPANY, LTD., Offchurch, Leamington, for **Leam Lancer**, light roan, born June 5; *s.* Eaton Magna Charta 130802, *d.* Lilac 9th (vol. 62, p. 925) *by* Heirloom 120692.

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[1] £20 towards these Prizes were given by the Dairy Shorthorn Association and £20 by the Shorthorn Society.

[2] Champion Prize of £10 given by the Dairy Shorthorn Association, for the best Bull in Classes 131-134.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

966 **IV. (£2.)**—THE EARL OF DERBY, K.G., Knowsley, Prescot, Lancs., for **Knowsley Carol Dolphin**, white, born April 10; *s.* Preshute Dolphin 127358 *d.* Stondon Carolina (vol. 63, p. 960) *by* Pastures General 116889.

973 **V. (£2)**—ALFRED PALMER, for **Wokefield Orange Boy**, roan, born June 13; *s* Kelmscott Acrobat 22nd 142170, *d.* Orange 51st (vol. 63, p. 809) *by* Cranford Freemason 1145 3.

963 **R. N.**—C. R. W. ADEANE, C.B., Babraham Hall, Cambridge, for **Babraham Peerless.**
H. C.—979. **C.**—965, 983.

Class 135.—*Dairy Shorthorn Cows (in-milk), calved in or before* 1913.

[26 entries.]

1005 **I. (£10, & Champion.[1])**—THE DUKE OF WESTMINSTER, Eaton Hall, Chester, for **Bare Charm** (vol. 60, p. 803) dark roan, born Nov 20 1913 calved June 9, 1920, bred by Richard Hall, Torrisholme Hall, Morecambe; *s.* Late Style 111137 *d.* Morecambe Pearl *by* Shy Officer 4th 108911.

1003 **II. (£5.)**—JOHN A. WILLIS, Manor House, Carperby, Yorks, for **Carleton Queen 7th** (vol 59, p. 1078), white, born April 15 1912 calved June 6, 1920 bred by John Wood, The Beeches, Carleton, Carlisle; *s.* Bright Mancunian 104672, *d.* Fairy Queen *by* Baron's Pride 89435.

998 **III. (£3.)**—OLYMPIA AGRICULTURAL COMPANY, LTD., Offchurch, Leamington, for **Bright Aster** (vol 59, p. 541), light roan born Jan. 16 1910, calved May 31, 1920, bred by R. Capstick, Bramshaw, Sedbergh, Yorks; *s.* Electron 95077, *d.* Aster 4th *by* Baron Clarence 82763.

986 **IV. (£2.)**—MAJOR G. J. BUXTON, Tockenham Manor, Wootton Bassett, Wilts, for **Castel Maid** (vol 58 p. 829), roan, born April 7, 1911, calved June 13, 1920, bred by T. Park, Castel Bank, Grayrigg, Westmorland; *s.* Favourite Boy 98815, *d.* Cressy 7th *by* San Francisco 81896.

996 **V. (£2.)**—ROBERT L. MOND, Combe Bank, Sundridge, Sevenoaks, Kent, for **Crudwell Milky Walton** (vol 59, p. 12), roan, born Nov. 25, 1912, calved March 11, 1920, bred by J. H. Large, Crudwell Manor, Malmesbury; *s.* Forest Duke 105639, *d.* Milky Walton *by* Master Walton 86585.

989 **R. N.**—A. R. FISH, Holme Mead, Hutton, near Preston, for **Lady Ruby 2nd.**
H. C.—992. **C.**—1001.

Class 136.—*Dairy Shorthorn Cows (in-milk), calved in* 1914 *or* 1915.

[19 entries.]

1020 **I. (£10, & R. N. for Champion.[1])**—J. MOFFATT, Spital, Kendal, for **Watercrook Cress 2nd** (vol. 62, p. 962), light roan, born July 15, 1915, calved June 11, 1920; *s.* Lord Nottingham 116317, *d.* Cressida 45th *by* Clipper Duke 105045.

1013 **II. (£5.)**—H. A. BROWN, Grendon, Atherstone, Warwickshire, for **Johnby Rose 15th** (vol 61, p 1124), red, born Sept. 2, 1914, calved May 23, 1920, bred by T. W. Workman, Carleton, Carlisle; *s.* County Squire 111410, *d.* Johnby Rose 11th *by* Bouncing Boy 91395.

1024 **III. (£3.)**—F. H. THORNTON, Kingsthorpe Hall, Northampton, for **Fairy Duchess 18th** (vol. 61, p 776) red and little white, born Nov 17, 1914, calved May 23, 1920, bred by G. Hankins, Biggin Grange, Oundle; *s.* Lord Crankley 2nd 112334, *d.* Fairy Duchess 17th *by* Royal Gwynne 103708.

1015 **IV. (£2.)**—F. CALVERT BUTLER, Greenlands Farm, Carnforth, for **Knowefield Duchess of Geneva 6th** (vol. 61, p. 571), roan, born Feb. 20, 1914, calved June 9, 1920, bred by A. Adamson, Springs Farm, Keswick; *s* Daisy's Pride 111481, *d.* Knowefield Duchess of Geneva 5th *by* Red Pearl 96687.

1017 **V. (£2.)**—CAPT. THE HON. E. A. FITZROY, M.P., Fox Hill, West Haddon, Rugby, for **Lady Nottingham 26th** (vol. 61, p 896), roan, born April 25, 1914, calved June 2, 1920, bred by A. Ritson, Hawkrigg House, Wigton; *s* Dairy Ingram 105184, *d.* Lady Nottingham 14 by York Rose 93950

1029 **R. N.**—CAPT. H. FITZHERBERT, Yeldersley Hall, Ashbourne, Derbyshire, for **Yeldersley Red Rose 4th.**
H. C.—1027. **C.**—1019.

Class 137.—*Dairy Shorthorn Cows (in-milk), calved in* 1916. [37 entries.]

1043 **I. (£10.)**—R. W. HOBBS & SONS, Kelmscott, Lechlade, for **Nottingham Heiress** (vol. 64, p. 1075) roan, born Feb. 12 calved April 28, 1920, bred by the late Lord Lucas, Wrest Park, Ampthill, Beds.; *s.* Heirloom 120692, *d* Lady Nottingham 16th *by* Abbotsford 5th 75981.

1060 **II. (£5.)**—VISCOUNT WIMBORNE, Ashby St. Ledgers, Rugby, for **Proud Duchess** (vol 63, p 1015), dark roan, born Feb. 1, calved June 4, 1920, bred by J. Moffat, Spital, Kendal; *s* Proud Prince 127480, *d.* Fanciful *by* Curfew Bell 105177.

1045 **III. (£3.)**—W. G. MILLAR, Bampton, Oxon., for **Grace Darling** (vol. 63, p. 645), red, born Aug. 3, calved April 25, 1920, bred by T. Bainbridge, Carnforth, Lancs.; *s.* Royal Briton 127469, *d.* Graceful Princess *by* Mealsgate Knight 109372.

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[1] Champion Prize of £10 given by the Shorthorn Society for the best Cow or Heifer in Classes 135-138. A Silver Medal is given by the Shorthorn Society to the Breeder of the Champion Dairy Shorthorn Cow.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1041 **IV.** (£2.)—A. R. FISH, Holme Mead, Hutton, Preston, for **Combebank Rosamond** (vol 63, p. 1017), dark roan, born Sept. 9, calved June 13, 1920, bred by Robert L. Mond, Sundridge Sevenoaks, Kent; *s.* Foundation Stone 105524, *d.* Fair Rosamond *by* Sub Inspector 100818.

1061 **V.** (£2.)—VISCOUNT WIMBORNE, for **Watercrook Cress 3rd** (vol. 63, p 1016), roan, born June 29, calved June 17, 1920, bred by J. Moffat, Spital, Kendal; *s.* Royal Prince 127937, *d* Cressida 45th *by* Clipper Duke 103045.

1048 **R. N.** ALFRED PALMER, Wokefield Park, Mortimer, Berks, for **Orange 51st.**
H. C.—1049. **C.**—1038.

Class 138.—*Dairy Shorthorn Heifers (in-milk), calved in* 1917.

[28 entries.]

1087 **I.** (£10.)—CAPT. ARNOLD S. WILLS, Thornby Hall, Northampton, for **Thornby Foggathorpe 7th** (vol. 65, p. 1391), white, born June 3, calved before the Show; *s.* Drusus 115142, *d.* Thornby Foggathorpe 2nd *by* Dreadnought 102049.

1080 **II.** (£5.)—HERBERT H. OWTRAM, Newland Hall, Lancaster, for **Newland Lottie 11th** (vol 64, p 1168), roan, born March 31, calved June 2, 1920; *s.* Mayflower Boy 116518, *d.* Newland Lottie 5th *by* Babraham Emperor Bates 97893.

1074 **III.** (£3.)—R. W. HOBBS & SONS, Kelmscott, Lechlade, for **Darling 36th** (vol. 64, p. 991), roan, born Sept. 14, calved May 15, 1920; *s.* Dairy Prince 114977, *d.* Darling 35th by Trickster 4th 118058.

1079 **IV.** (£2.)—OLYMPIA AGRICULTURAL COMPANY, LTD., Offchurch, Leamington, for **Daphne** (vol. 64, p. 1164), roan, born July 15, calved May 15, 1920; *s.* Premier Gift 132760, *d.* Doreen *by* Foundation Stone 105524.

1078 **V.** (£2.)—ROBERT L. MOND, Combe Bank, Sundridge, Sevenoaks, for **Combe Bank Ringlet** (vol. 64, p. 1121), light roan, born May 23, calved June 1, 1920; *s.* Foundation Stone 105524, *d.* Hadnock Ringlet 37th *by* Dean Prince 111489.

1076 **R. N.**—ROBERT DUNNING HOLT, High Borrans, Windermere, for **Beaumont Seraph.**
H.C.—1086. **C.**—1063, 1070, 1089.

943, 1043, 1074 (**Cup.**[1])—R. W. HOBBS & SONS, for **Kelmscott Jester 2nd, Nottingham Heiress, and Darling 36th.**

971, 998, 1079 (**R. N for Cup.**[1])—OLYMPIA AGRICULTURAL COMPANY, LTD., for **Leam Lancer, Bright Aster, and Daphne.**

962, 963, 1012, 1013, 1065 (**Cup.**[2])—C. R. W. ADEANE, C.B., for **Babraham Christopher 2nd, Babraham Peerless, Babraham Diligent, Babraham Lady Combine, and Babraham Lady Thorndale.**

Non-Pedigree Dairy Shorthorns.

Class 139.—*Non-Pedigree Shorthorn Dairy Cows (in-milk).*

[2 entries: both absent.]

Class 140.—*Non-Pedigree Dairy Shorthorn Heifers (in-milk), calved in* 1917.

[No entry.]

Lincolnshire Red Shorthorns.[3]

Class 141.—*Lincolnshire Red Shorthorn Bulls, calved in or before* 1917.

[7 entries.]

1098 **I.** (£10 & **Champion.**[4])-MRS. M. M. WEBB & SONS, Melton Ross, Barnetby, Lincs, for **Risby Dandy** 13788, born Jan. 6, 1917, bred by Harry Abraham, Risby Manor, Thealby, Lincoln; *s.* Bonby Emperor 6598, *d.* Normanby Milkmaid 2nd *by* Scampton Lucitanus 7875.

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[1] Silver Challenge Cup, value 50 guineas, given through the Dairy Shorthorn Association for the best group of one Bull and two Cows or Heifers in Classes 131-138. Two at least of the animals must have been bred by the Exhibitor.

[2] Perpetual Challenge Cup, value 50 guineas, given through the Dairy Shorthorn Association, for the best 5 animals (of which not more than two shall be bulls) by the same sire entered in Classes 131-138.

[3] £80 towards these Prizes were given by the Lincolnshire Red Shorthorn Association.

[4] Champion Prize of £10 given by the Lincolnshire Red Shorthorn Association for the best Bull in Classes 141-143.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor.

1094 II. (£5.)—ANCELL B. HOLT, Home Farm, Sturton, Brigg, Lincolnshire, for **Grainthorpe Magnum** 13499, born April 4, 1917, bred by Col. H. T. Fenwick, Sea Farm, Grainthorpe, S.O., Lincolnshire ; *s.* Scampton Marquis 8514, *d.* Grainthorpe Rose *by* Jubilant 99240 C.H.B.

1096 III. (£3.)—GEORGE MARRIS, Kirmington, Brocklesby, Lincs. for **Kirmington Excursionist 13th** 11689, born July 7, 1914 ; *s.* Scampton Excursionist 4089, *d.* Kirmington Rose 31st *by* Scampton Forester 4557.

1095 R. N.—A. PRESTON JONES, Mickleover House, Derby, for **Scampton Recruit.**
H.C.—1097.

Class 142.—*Lincolnshire Red Shorthorn Bulls, calved in* 1918. [5 entries.]

1102 I. (£10, & R. N. for Champion.[1])—ANCELL B. HOLT, Home Farm, Sturton, Brigg, Lincolnshire, for **Kirmington Quality** 15582, born Jan. 30, bred by George Marris, Kirmington, Brocklesby, Lincs ; *s.* Scampton Quality 11912, *d.* Scampton Rose *by* Brandon Grenadier 4274.

1101 II. (£5.)—JOHN KENNETH FOSTER Coombe Park, Whitchurch, Oxon, for **Kirmington Ruby King 44th** 15584, born May 2, bred by George Marris, Kirmington, Brocklesby, Lincs. ; *s.* Scampton King of the Rubies 7122, *d.* Kirmington Rose 41st *by* Kirmington Wandering Chief 6182.

1100 III. (£3.)—JOHN EVENS & SON, Burton, near Lincoln, for **Kirmington Ruby King 56th**, born Aug. 4, bred by George Marris, Kirmington, Brocklesby, Lincs : *s.* Kirmington Ruby King 21st 11075, *d.* Kirmington Molly (vol. 25, p. 391) *by* Scrubby Red Coat 1st 5647.

1099 R. N.—MAJOR H. COOPER, Flawborough, Orston, Notts, for **Flawborough Surprise.**

Class 143.—*Lincolnshire Red Shorthorn Bulls, calved in* 1919. [6 entries.]

1107 I. (£10.)—O. W. PORRITT, Helmshaw, Manchester, for **Pendley Ruby Magnet**, born July 15, bred by the Pendley Stock Farms, Tring ; *s.* Scampton Quality 11912, *d.* Saltfleet Ruby 20th *by* Blucher of Wick 94361 C. H. B.

1104 II. (£5.)—C. DE PARAVICINI, St. Vincent's, Grantham, for **Beacon Hill Poilu**, born May 10 ; *s.* Croxton Ruby 63rd 11482, *d.* Beacon Hill Harlaxton *by* Scampton Judge 6327.

1108 III. (£3.)—J. H. ROBINSON, Bank House, Anderby, Alford, Lincs, for **Anderby Recoil**, born May 12 ; *s.* Pendley Red Coat 13747, *d.* Anderby No. 363 *by* Bilsby Indomitable 11th 8706.

1106 R. N.—JOHN KENNETH FOSTER, Coombe Park, Whitchurch, Oxon, for **Kirmington Coombe Ruby King.**

Class 144.—*Lincolnshire Red Shorthorn Cows (in-milk), calved in or before* 1916. [10 entries.]

1116 I. (£10.)—COL. J. GRETTON, M.P., Stapleford Park, Melton Mowbray, for **Burton Cork 15th** (vol. 22, p. 349), born April 14, 1913, calved May 19, 1920, bred by John Evens & Son, Burton, Lincoln ; *s.* Burton Excellence 7396, *d.* Burton Cork 10th *by* Mr. Cherry 6211.

1119 II. (£5.)—LT.-COL. SIR A. G. WEIGALL, K.C.M.G., Petwood, Woodhall Spa, Lincs, for **Sudbrook 129c** born June 28, 1914, calved March 26, 1920, bred by Fred. Scorer, Sudbrook, nr. Lincoln ; *s.* Pendley Sudbrook Pearl 7808, *d.* Bracebridge 161B (vol. 15, p. 337) *by* Bracebridge Walker 4710.

1112 III. (£3.)—JOHN EVENS & SON, Burton, near Lincoln, for **Burton Cherry 3rd** (vol. 23, p. 298), born Oct. 6, 1914, calved May 4, 1920, bred by John Evens ; *s.* Burton Fulnetby 9694, *d.* Burton Cherry Blossom *by* Burton Challenger 2nd 4723.

1117 R. N.—COL. J. GRETTON, M.P., for **Kirdiston Phœbe 10th.**

H.C.—1110, 1114.

Class 145.—*Lincolnshire Red Shorthorn Cows or Heifers (in-milk), calved in or before* 1917, *showing the best milking properties.* [12 entries.]

1126 I. (£10.)—JOHN EVENS & SON, Burton, near Lincoln, for **Burton Fillpail 3rd** (vol. 21, p. 299), born Jan. 31, 1912, calved May 27, 1920, bred by John Evens ; *s.* Hermit 102494, *d.* Burton Fillpail 2nd (vol. 18, p. 269.)

1127 II. (£5.)—JOHN EVENS & SON, for **Burton Fillingham** (vol. 25, p. 329), born April 20, 1915, calved May 21, 1920, bred by G. E. Jarvis, Doddington, Lincoln ; *s.* Hainton Kitchener 11590 *d.* Fillington *by* Digby Bean 1st 9834.

1122 III. (£3.)—STANLEY BLUNDELL, Bendish House, Welwyn, Herts., for **Bendish Marcia 2nd** (vol. 21, p. 282), born Aug. 27, 1914, calved May 26, 1920 ; *s.* Bracebridge Prince 2nd 7384, *d.* Bendish Marcia *by* Crimson Boy 4772.

1120 R. N.—ARTHUR BARBER, Grove Grange, Retford, for **Retford Dairymaid.**
H. C.—1123, 1124, 1125. C.—1130.

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[1] Champion Prize of £10 given by the Lincolnshire Red Shorthorn Association for the best Bull in Classes 141-143.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 146.—*Lincolnshire Red Shorthorn Heifers (in-milk), calved in* 1917. [3 entries.]

1134 I. (£10, & R.N. for Champion.[1])—MAJOR T. JESSOP, Harrington Hall, Spilsby, Lincs., for **Pendley Martha,** (vol. 24, p. 452), born March 10, calved Dec. 5, 1919, bred by G. E. Saunders, Scampton, Lincoln; *s.* Scampton Quality 11912, *d. by* Keddington Searchlight 4883.

1133 II. (£5.)—COL. J. GRETTON, M.P., Stapleford Park, Melton Mowbray, for **Stapleford Dairy Girl** (vol. 24, p. 365), born March 16, calved May 11, 1920; *s.* Wooton Artic 10399, *d.* Stapleford Dairy Maid *by* Stapleford Ranger 2nd 4990.

1132 III. (£3.)—ARTHUR BARBER, Grove Grange, Retford, for **Retford Quality 2nd** (vol. 24, p. 308), born Sept. 4, calved May 18, 1920; *s.* Anderby Pookham 79553, *d.* Retford Quality (vol. 24, p. 310) *by* Saleby Excursionist 2nd 7102.

Class 147.—*Lincolnshire Red Shorthorn Heifers, calved in* 1918. [4 entries.]

1135 I. (£10, & Champion.[1])—MAJOR H. COOPER, Flawborough, Orston, Notts., for **Flawborough Nancy,** born July 11; *s.* Flawborough Chieftain 12518, *d.* Flawborough Priceless *by* High Toynton Coronation 8332.

1136 II. (£5.)—C. DE PARAVICINI, St. Vincents, Grantham, for **Saltfleet Fancy,** born Nov. 3, bred by T. Freshney, Grainthorpe House, Grainthorpe, Lincs.; *s.* Croxton Ruby 50th 9803, *d. by* Sheddington Comet 3443.

1137 III. (£3.)—JOHN KENNETH FOSTER, Coombe Park, Whitchurch, Oxon., for **Pendley Treasure 2nd** (vol. 25, p. 408), born May 3, bred by J. G. Williams, Pendley Manor, Tring; *s.* Scampton Marvel 8517, *d.* Donnington Prima Donna 6th *by* Willoughby Artilleryman 8027.

1138 R. N.—MAJOR T. JESSOP, Harrington Hall, Spilsby, Lincs., for **Pendley Rosetta.**

Class 148.—*Lincolnshire Red Shorthorn Heifers, calved in* 1919. [13 entries.]

1141 I. (£10.)—MAJOR H. COOPER, Flawborough, Orston, Notts., for **Flawborough Lassie** (vol. 26), born Jan. 3; *s.* Flawborough Chieftain 12518, *d.* Flawborough Fanny *by* Blusterer 101577 C.H.B.

1151 II. (£5.)—LT.-COL. SIR A. G. WEIGALL, K.C.M.G., Petwood, Woodhall Spa, Lincs., for **Croxby Empress** (vol. 26), born April 4, bred by C. W. Tindall, Wainfleet, Lincs.; *s.* Tealby No. 329 14000, *d.* Empress 11th *by* Vaulter 118117 C.H.B.

1147 III. (£3.)—T. H. B. FRESHNEY, Worlaby, Brigg, for **Saltfleet Rosetta,** born May 16, bred by the Pendley Stock Farms, Tring; *s.* Scampton Quality 11912, *d.* Scampton Rosetta *by* Brandon Grenadier 4274.

1146 R. N.—T. H. B. FRESHNEY, for **Saltfleet Red Rose.**

H. C.—1143, 1145.

Herefords.[2]

Class 149.—*Hereford Bulls, calved in or before* 1917. [6 entries.]

1157 I. (£10, & Champion.[3])—T. ROE THOMPSON, Bean House Farm, Cradley, Malvern, for **Resolute 35537,** born Jan. 15, 1917, bred by S. Robinson, Lynhales, Kington, Herefordshire; *s.* Ringer 31920, *d.* Orange 11th *by* Gainsborough 28303.

1156 II. (£5, & R. N. for Champion.[3])—STEWART ROBINSON, The Ovals, Kington, Herefordshire, for **Mansel Handyman 33954,** born Jan. 11, 1916, bred by Capt. R. T. Hinckes, Foxley, Hereford; *s.* Starlight 26754, *d.* Dame Hirondelle *by* Eaton Pearl 26830.

1154 III. (£3.)—P. & G. HUGHES, Gresty, Crewe, for **Actuary 34524,** born Jan. 27, 1917, bred by W. S. Russell, Westonbury, Pembridge; *s.* Renown, *d.* Lively *by* Taurus 25015.

1155 R. N.—K. W. MILNES, The Field, Hereford, for **Squire Rougemont.**

Class 150.—*Hereford Bulls, calved in* 1918. [17 entries.]

1168 I. (£10.)—SYDNEY PYMAN, Pigeon House Farm, Ross-on-Wye, Herefordshire, for **Premier,** born Jan. 7, bred by T. R. Thompson, Ruta, Stanwell Road, Penarth, Glam.; *s.* Premier 34160, *d.* Pina (vol. 46, p. 989) *by* Rougemont 2nd 27841.

1173 II. (£5.)—JOHN WALKER, Knightwick Manor, Worcester, for **Twyford Garnet,** born February 1, bred by S. C. Hayter, Twyford, Pembridge, *s.* Ringer 31920, *d.* Dorothea (vol. 46, p 594) *by* Xmas Gift 25882.

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[1] Champion Prize of £10 given by the Lincolnshire Red Shorthorn Association for the best Cow or Heifer in Classes 144-148.

[2] £50 towards these Prizes were given by the Hereford Herd Book Society.

[3] Champion Prize of £10 10*s.* given by the Hereford Herd Book Society for the best Bull in Classes 149-152.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1167 III. (£3.)—CHARLES T. PULLEY, M.P., Lower Eaton, Hereford, for **Eaton Jasper** 36032, born Jan 11; *s.* Eaton Eclipse 32470, *d.* Claudine 2nd *by* Eaton Masterpiece 25315.

1161 IV. (£2.)—LORD CAWLEY, Berrington Hall, Leominster, for **Berrington Boy** 35990, born Feb. 1; *s.* Carlos 28980, *d.* Conry *by* Weston Speculator 29453.

1158 R. N.—HIS MAJESTY THE KING, The Royal Farms, Windsor, for **Sir Edward.**

H. C.—1172, 1174. C.—1160, 1162.

Class 151.—*Hereford Bulls, calved in January or February*, 1919. [22 entries.]

1182 I. (£10.)—CAPTAIN R. T. HINCKES, Mansel Court, Mansel Lacey, Hereford, for **Mansel Banner Master** 37345, born Jan. 29; *s.* Starlight 28754, *d.* May Morning (vol. 48, p. 500) *by* Kismet 29107.

1187 II. (£5.)—K. W. MILNES, The Field, Hereford, for **Larder** 37146, born Jan. 7; *s.* Hermit 32602, *d.* Neckchain (vol. 46, p. 742) *by* Sir James 26489.

1176 III. (£3.)—PERCY E. BRADSTOCK, Free Town, Tarrington, Hereford, for **Old Glory** 37576, born Jan. 17; *s.* Goodenough 33710, *d.* Pipette *by* Lynch Trifler 30752

1184 IV. (£2.)—P. & G. HUGHES, Gresty, Crewe, for **Aldersend May King** 35843, born Jan. 21, bred by William Griffiths, Aldersend, Tarrington, Hereford; *s.* Aldersend Wilton 34542, *d.* Mayflower (vol. 47, p. 530) *by* Starlight 28754.

1194 V. (£2.)—EDWARD CRAIG TANNER, Eyton-on-Severn, Shrewsbury, for **Eyton Judge**, born Jan. 18; *s.* Prince Charming 29082, *d.* Madeline 4th *by* Newstead 30814.

1190 R. N.—NEWMAN BROTHERS, Lower Wickton, Leominster, for **Oyster King.**

H. C.—1180, 1185. C.—1188, 1193.

Class 152.—*Hereford Bulls, calved in* 1919, *on or after March* 1. [10 entries.]

1201 I. (£10.)—WILLIAM GRIFFITHS, Aldersend, Tarrington, Hereford, for **Aldersend Digger**, born March 8; *s.* Subaltern 35354, *d.* Day Dream (vol. 45, p. 561) *by* Sir Bedivere 27228

1206 II. (£5.)—OWEN WILLIAMS, Crossways, Cowbridge, Glamorgan, for **Crossways Hampton**, born March 9; *s.* Ringer 31920, *d.* Darling (vol. 47, p. 621) *by* Xmas Gift 25882.

1203 III. (£3.)—NEWMAN BROTHERS Lower Wickton, Leominster, for **Grenadier**, born April 2; *s.* Patchwork 34039, *d.* Gipsy 7th *by* Primate 31849.

H. C.—1204.

Class 153.—*Hereford Cows (in-milk), calved in or before* 1916. [8 entries.]

1209 I. (£10, & Champion.[1])—THE EARL OF COVENTRY, Croome Court, Worcester, for **Garland**, born Feb 22, 1913, calved Feb. 25, 1920; *s.* Ivington Bright 28380, *d.* Galopade 2nd (vol. 42, p. 381) *by* Maxwell 24155.

1208 II. (£5.)—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury, for **Clive Polly 2nd**, born Feb. 20, 1916 calved April 8 1920; *s.* Farman Beau 30544, *d.* Clive Violet 3rd (vol. 43, p 415) *by* Coup de Ore 29016.

1210 III. (£3.)—WALTER HARRY DEPPER, Dean Park, Tenbury Wells, for **Guilder Rose 2nd**, born Feb. 15, 1916, calved May 11, 1920; *s.* Lord Clive 31695, *d.* Guilder Rose (vol. 44, p. 336) *by* Mariner 28468.

1214 R. N.—OWEN WILLIAMS, Crossways, Cowbridge, for **Christabel Pankhurst.**

H. C.—1212. C.—1207, 1213.

Class 154.—*Hereford Heifers (in-milk), calved in* 1917. [2 entries.]

1216 I. (£10.)—OWEN WILLIAMS, Crossways, Cowbridge, Glamorgan, for **Holly Nancy**, born Jan. 2, calved March 3, 1920, bred by J. Jones, Hollybush Farm, Cowbridge, Glam.; *s.* Remus 31913 *d.* Nancy (vol. 43, p. 257) *by* Aaron 25084.

1215 II. (£5.)—WILLIAM JAMES PITT, The Albynes, Bridgnorth, Salop, for **Damson**, born April 16 calved March 1, 1920; *s.* Newstead 30814, *d.* Newton Plum (vol. 45, p. 370) *by* Dorchester 26810.

Class 155.—*Hereford Heifers, calved in* 1918. [5 entries.]

1221 I. (£10.)—A. W. TROTMAN, Llangston Court, Newport, Mon., for **Rarity**, born Jan. 26, bred by the late Viscount Rhondda, Llanwern Park, Newport; *s.* Sir Sam 33131, *d.* Rosalind *by* Golden Plume 24633.

1218 II. (£5.)—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury, for **Clive Spangle 4th**, born Feb. 7; *s.* Shucknall Prince 33124, *d* Clive Sparkle 3rd (vol. 59, p. 360) *by* Crusader 26038.

1219 III. (£3.)—WILLIAM HENRY BROWN CAVE, Wall End, Monkland, Leominster, for **Deborah**, born June 8; *s.* Doctor 31419, *d.* Dorinda (vol. 49, p. 403) *by* Cross Belt 27470.

1217 R. N.—F. & F. B. BIBBY, for **Clive Buttercup 6th.**

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[1] Champion Prize of £10 10*s.* given by the Hereford Herd Book Society for the best Cow or Heifer in Classes 153-156.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 156.—*Hereford Heifers, calved in* 1919. [16 entries.]

1230 I. (£10, & R. N. for Champion.[1])—K. W. MILNES, The Field, Hereford, for **Stanway Necklace 6th**, born Feb. 14; *s.* Hermit 32602, *d.* Stanway Necklace (vol. 45, p 748) *by* Sir James 26489.

1237 II. (£5.)—OWEN WILLIAMS, Crossways, Cowbridge, Glamorgan, for **Crossways Yule Oyster**, born Jan 1; *s* Ringer 31920, *d.* Oyster Queen (vol. 48. p. 658) *by* Highland Prince 25437.

1236 III. (£3.)—OWEN WILLIAMS, for **Crossways Opal**, born Jan. 6; *s.* Ringer 31920, *d.* Sheepcote Opal (vol. 47, p. 625) *by* Milton 25571.

1226 IV. (£2.)—GEORGE HENRY DRUMMOND, Pitsford Hall. Northampton, for **Mystery**, born Jan. 12; *s.* Sir Sam 33131, *d.* Mermaid (vol. 45. p. 796) *by* Mariner 28468.

1235 R. N.—OWEN WILLIAMS, for **Crossways Eira.**
H. C.—1223, 1234. C.—1222, 1224.

Devons.

Class 157.—*Devon Bulls, calved in or before* 1918. [5 entries.]

1239 I. (£10, & Champion.[2])—H R H THE PRINCE OF WALES, K G., Stoke Climsland, Cornwall, for **Clampit Gay Laddie 9197**, born Nov. 30, 1915, bred by Wm. Brent, Clampit, Callington; *s.* Ford Plumper 7381, *d* Clampit Gaiety 19283 *by* Yeoman 4326.

1238 II. (£5, & R. N. for Champion.[2])—HIS MAJESTY THE KING, The Royal Farms, Windsor, for **Windsor Captain 8325**, born Feb. 21 1913; *s.* Captain Masher 6639, *d.* Highfield Famous 3rd *by* Highfield Royal 5829.

1242 III. (£3.)—A. C SKINNER & SON, Pound, Bishops Lydeard, for **Pound Larker. 10282**, born June 15, 1918; *s.* Shotcomb Admiral 7411, *d.* Pound Laurel 2nd 28723 *by* Loolinch Don 6448.

1241 R. N.—CHARLES MORRIS, Highfield Hall, St. Albans, for **Heatherton Pilot.**

Class 158.—*Devon Bulls, calved in* 1919. [5 entries.]

1244 I. (£10.)—H.R.H. THE PRINCE OF WALES, K.G., Stoke Climsland. Cornwall, for **Coombeshead Senator**, born Feb. 9: *s.* Clampit Gay Laddie 9197, *d.* Daisy 37th 25036 *by* Stockleigh Magnum Bonum 6217.

1246 II. (£5.)—CHARLES MORRIS, Highfield Hall, St. Albans, for **Highfield Supertax-payer**, born Feb 8: *s.* Highfield Hero 2nd 9332, *d.* Highfield Shaggy 5th 26934 *by* Capton Bellringer 4911.

1245 III. (£3.)—CHARLES MORRIS, for **Brickley Fairfax**, born Feb. 9, bred by Samuel Kidner, Bickley, Milverton, Somerset; *s.* Highfield Gem 3rd 9650, *d.* Goldfinder's Stuckey 25942, *by* Stockleigh Goldfinder 7268.

Class 159.—*Devon Cows or Heifers (in-milk), calved in or before* 1917. [3 entries.]

1250 I. (£10, & R. N. for Champion.[3])—CHARLES MORRIS, Highfield Hall, St. Albans, for **Highfield Farthing 8th 29398**, born Dec. 26, 1916, calved Jan. 16th, 1920; *s.* Highfield General 8105, *d.* Highfield Farthing 5th 26925 *by* Capton Bellringer 4911.

1249 II. (£5.)—CHARLES MORRIS, for **Highfield Darkie 5th 28570**, born Aug. 6, 1915, calved April 11, 1920; *s.* Holcombe Reminder 7413 *d.* Darkie 5th 23716 *by* Combe Lord 5461.

Class 160.—*Devon Dairy Cows or Heifers (in-milk), calved in or before* 1917.[4] [11 entries.]

1259 I. (£10.)—R. A. CLARKE & SONS, Manor Farm, Chiselborough, Stoke-under-Ham, Somerset, for **Maude Royal 24935**, born May 27, 1911, calved June 6, 1920: *s.* Woodlands Milkman 6591, *d.* Maude C. 90, *by* Morning Star 4639.

1255 II. (£5.)—JOHN H. CHICK, Wynford Eagle, Dorchester, for **Wynford Pill C. 292**, born July 23, 1913, calved May 21, 1920; *s.* Compton Moses 7015, *d.* Wynford Pink 1st B 353 *by* Compton Rattler 6309.

1251 III. (£3.)—W. G. BUSK, Wraxall Manor, Dorchester, for **Suffragette 1st 2651**, red, born Feb 1, 1913, calved May 27, 1920, bred by A. Clarke, Chiselborough, Somerset; *s.* Rainbow Goodman 6888, *d.* Suffragette.

1260 R. N.—ALFRED T. LORAM, Rosamondford, Aylesbeare, Devon, for **Landlady.**
H. C.—1252. C.—1258.

Class 161.—*Devon Heifers, calved in* 1918. [3 entries.]

1262 I. (£10, & Champion.[3])—CHARLES MORRIS, Highfield Hall, St. Albans, for **Highfield Belle 3rd 31244**, born Feb. 1; *s.* Highfield Advance 9318, *d.* Highfield Belle 2nd 28562 *by* Holcombe Reminder 7413.

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[1] Champion Prize of £10 10*s.* given by the Hereford Herd Book Society for the best Cow or Heifer in Classes 153-156.

[2] Champion Prize of £10 10*s.* given by the Devon Cattle Breeders' Society for the best Bull in Classes 157 and 158, entered or eligible for entry in the Devon Herd Book.

[3] Champion Prize of £10 10*s.* given by the Devon Cattle Breeders' Society for the best Cow or Heifer in Classes 159-162, entered or eligible for entry in the Devon Herd Book.

[4] Prizes given by the Devon Cattle Breeders' Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1264 II. (£5.)—ALFRED POPE, Henstill, Sandford, Crediton, Devon, for **Sandford Curly 8th**, born Jan 18; *s.* Barum Duke 8355, *d.* Sandford Curly 20888 *by* Bickham Boy 3rd 4531.

1263 III. (£3.)—CHARLES MORRIS, for **Highfield Dizzy** 31250, born March 26; *s.* Woodland's Goldsmith 9525, *d.* Dorset Dizzy 20910 *by* Wynuthorpe Woodrough 6599.

Class 162.—*Devon Heifers, calved in* 1919. [3 entries.]

1267 I. (£10.)—MRS. A. C. SKINNER & SON, Pound, Bishops Lydeard, for **Pound Duchess 13th**, born Jan. 30, *s.* Highfield Gem 3rd 9630, *d.* Pound Duchess 12th 29558 *by* Dairyman 7040.

1266 II. (£5.)—CHARLES MORRIS, Highfield Hall, St. Albans, for **Highfield Hetty** 32178, born Jan. 3; *s.* Highfield Gem 2nd 9329, *d.* Pound Hetty 3rd 29561. *by* Dairyman 7040

South Devons.[1]

Class 163.—*South Devon Bulls, calved in or before* 1918. [5 entries.]

1272 I. (£10, & Champion.[2])—BEN LUSCOMBE, Bowden Yealmpton, for **Bowden Strawberry Boy** 6953, born Jan. 1, 1917; *s.* Coarswell Yellow Boy 4014, *d.* Strawberry 2nd 11741.

1270 II. (£5.)—W. L. HOSKING & SONS, Fentongollan, Merther Probus, Cornwall, for **Palston Ruler** 5545 born April 5 1914, bred by J. W. Wakeham & Sons, Palston South Brent Devon; *s.* Young Duke 5958 *d.* Nell 2nd 13400 *by* McKinley 2703.

1268 III. (£3.)—CAPT H. R. FOX, South Bittisborough, Holbeton, Plymouth, for **Bulliegh Captain** 5331, born Dec. 11, 1914 bred by T. Willing, Bulliegh, Barton, Ipplepen Newton Abbott, *s.* Pamflete Perfection 2nd 4514, *d.* Cherry 11275 *by* Friendship 2614

Class 164.—*South Devon Bulls, calved in* 1919. [6 entries.]

1277 I. (£10.)—LT.-COL. THE RT. HON. F. B. MILDMAY, M.P. Flete, Ivybridge, for **Lilly's Champion** 7589, born Jan. 13; *s.* Warrior 6299, *d.* Lilly 7th 15391 *by* Bickham Beauty 1260.

1276 II. (£5.)—BEN LUSCOMBE, Bowden, Yealmpton, for **Bowden Countess King** 8324, born Feb. 15, *s.* Bowden Cherry King 2nd 5306, *d.* Countess 11032

1278 III. (£3.)—J. SPARROW WROTH & SONS Coombe, Aveton Gifford, South Devon, for **Norseman** 8772, born April 29; *s.* Chancellor 7029, *d.* Nosegay 7th 13551 *by* Silver Royal 2771.

Class 165.—*South Devon Cows or Heifers (in-milk), calved in or before* 1917. [7 entries]

1279 I. (£10, & R. N. for Champion.[2])—DAVID CAMP & SONS, Widland, Modbury, Devon, for **Buttercup 5th** 11777, born Sept. 27, 1912, calved March 14, 1920, bred by T. W. Luscombe, Gt Englebourne, Totnes; *s.* Rew Rentpayer 3548, *d.* Buttercup 6th 7886 *by* Yam-Yam 2052.

1280 II. (£5.)—R. & H. CHAFFE, Worswell Barton, Revelstoke, Plymouth, for **Worswell Phyllis** 13667, born Nov. 29, 1914, calved Nov. 10, 1919; *s.* Pamflete Dairyman 4509, *d.* Worswell Primrose Girl 11383 *by* Peter the Piper 3842.

1281 III. (£3.)—JOHN COAKER, Blagdon Barton, Paignton, Devon, for **Primrose** 11111, born April 12, 1911, calved Jan. 16, 1920, bred by John S. Smerdon, Darlington, Barton, Totnes; *s.* King of Hearts 2402, *d.* Prettymaid 6030 *by* Duke of York 1439.

Class 166.—*South Devon Heifers, calved in* 1918. [4 entries.]

1286 I. (£10.)—LT.-COL. THE RT. HON. F. B MILDMAY, M.P., Flete, Ivybridge, for **Lilian Favourite** 20112, born Sept 14; *s.* Warrior 6299 *d.* Lilian 10164 *by* Henry 8th 3179.

1287 II. (£5.)—ROBERT SKINNER, Sketchford, Buckfastleigh, Devon, for **Alice** 20507, born May 14; *s.* Molenick Monarch 4979 *d.* Careless 15964 *by* Well Bred 4647.

1289 III. (£3.)—J. SPARROW WROTH & SONS, Coombe, Aveton Gifford, Devon, for **Snowball** 20891, born Feb. 8; *s.* Widland Perfection 5217, *d.* Sylvia 3rd 14877 *by* Silver Royal 2771.

Class 167.—*South Devon Heifers, calved in* 1919. [5 entries.]

1290 I. (£10.)—R. & H. CHAFFE Worswell Barton, Revelstoke, Plymouth, for **Worswell Gladys 11th**, born July 21; *s.* Widland Champion 6874, *d.* Worswell Gladys 4th 13663 *by* Merafield Royal Star 4102.

1292 II. (£5.)—LT.-COL. THE RT. HON. F. B. MILDMAY, M.P., Flete, Ivybridge, for **Lilly 10th** 21604, born Jan. 11; *s.* Lilian Champion 6016 *d.* Lily 5th 12962 *by* Bulleigh Prince 3109

1291 III. (£3.)—JAMES ISMAY, Iwerne Minster, Blandford, for **Iwerne Milkmaid**, 21606 born Aug. 17, *s.* Councillor 12th 4828, *d.* Countess 7th 16863.

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[1] £29 towards these Prizes were given by the South Devon Herd Book Society.

[2] Silver Challenge Cup, value £20, given through the South Devon Herd Book Society, for the best Animal in Classes 163-167.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Longhorns.[1]

Class 168.—*Longhorn Bulls, calved in or before* 1918. [2 entries.]

1296 I. (£10, & Champion[2].)—J. W. SWINNERTON-WESTON, Over Whitacre House, Birmingham, for **Whitacre Venture 2nd 754**, brindle and white, born June 12, 1915; *s.* April Fool 634, *d.* Stivichall Doreen *by* Susan's Son 515.

Class 169.—*Longhorn Bulls, calved in* 1919. [4 entries.]

1300 I. (£10, & R. N. for Champion[3].)—J. W. SWINNERTON-WESTON, Over Whitacre House, Birmingham, for **Whitacre Venturesome**, brindle and white, born May 4; *s.* Whitacre Venture 754, *d.* Lady Agatha 5th of Kent (vol. 10, p. 21) *by* Eastwell Eagle 500.

1297 II. (£5.)—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for **Putley Rex**, red brindle and white, born April 25; *s.* Croft Captain 730, *d.* Putley Rudbeckia (vol. 10, p. 24) *by* Poles Czar 685.

1298 III. (£3.)—W. HANSON SALE, Arden Hill, Atherstone, for **Arden Re-union**, red and white, born May 26; *s.* Controller of Kent 768, *d.* Arden Ermine *by* Arden King Maker 645.

1299 R. N.—J. W. SWINNERTON-WESTON, for **Whitacre Guard.**

Class 170.—*Longhorn Cows or Heifers (in-milk), calved in or before* 1917. [4 entries.]

1303 I. (£10, & R. N. for Champion.[2])—W. E. SWINNERTON, Manor House, Over Whitacre, Birmingham, for **Stivichall Doreen 3rd**, brindle and white, born May 2, 1917, calved June 19, 1920; *s.* April Fool 634, *d.* Stivichall Doreen 2nd (vol. 9, p. 63) *by* Eastwell Exact 733.

1301 II. (£5.)—W. HANSON SALE, Arden Hill, Atherstone, for **Arden Cinderella**, red brindle and white, born June 17, 1916, calved May 10, 1920; *s.* Arden King Maker 645, *d.* Arden Lady Panza (vol. 8, p. 44) *by* Putley Gay Lad 546.

1302 III. (£3.)—W. HANSON SALE, for **Grace 15th**, dark brindle and white, born July 4, 1915, calved June 25, 1920; *s.* Stowe Marinson 709, *d.* Grace 13th (vol 7, p. 47) *by* Westmeath Boy 433.

1304 R. N.—J. W. SWINNERTON-WESTON, Over Whitacre House, Birmingham, for **Arbury Rosebud.**

Class 171.—*Longhorn Heifers, calved in* 1918 *or* 1919. [1 entry.]

1305 I. (£10, & Champion.[3])—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for **Putley Dianthus 2nd**, red brindle and white, born Aug. 2, 1918; *s.* Croft Captain 730, *d.* Putley Dianthus (vol. 9, p. 51) *by* Waddon Friar 552.

Sussex.[4]

Class 172.—*Sussex Bulls, calved in or before* 1918. [5 entries.]

1308 I. (£10, & Champion.[5])—GEORGE T. EATON, Thurston Hall, Framfield, Sussex, for **Brownings Miller 27th**, born Jan. 18, 1918, bred by James Groves, Brownings Manor, Blackboys, Sussex; *s.* Brownings Miller 6th 3883, *d.* Brownings Crystal 1st *by* Apsley Albert 2nd 2706.

1306 II. (£5.)—G. R. BENNETT, Old House Farm, West Hoathly, Sussex, for **Newick Bandsman 2nd 4785**, born Jan. 9, 1918, bred by the Rev. F. S Sclater, Newick Park, Lewes, Sussex; *s.* Petworth Golddust 4170. *d.* Musical 11405 *by* Lord Eric 1090.

1309 III. (£3.)—H. S. GRAVES, Cinder Farm House, Chailey, Lewes, for **St. Albans 39th 4401** born Jan. 10, 1917, bred by Col. W. W. Hammond, St. Albans Court, Nonnington, Dover; *s.* Old Place Gold 2nd 2980, *d* Sylph 45th 14000 *by* K.C. 2523.

1307 R. N.—J. RAYNER BETTS, Greenhill, Otham, Maidstone, for **Ockham Noble.**

Class 173.—*Sussex Bulls, calved in* 1919. [7 entries.]

1313 I. (£10, & R. N. for Champion.[5])—GEORGE T. EATON, Thurston Hall, Framfield, Sussex, for **Brownings King**, born Jan. 1, bred by James Groves, Brownings Manor, Blackboys, Sussex; *s.* St. Albans 39th 4401, *d.* Brownings Galatea 1st 16282 *by* Lock Miller 2nd 2994.

1311 II. (£5.) G. R. BENNETT, Old House Farm, West Hoathly, Sussex, for **Ridge Geoffrey 2nd**, born April 13; *s.* St. Albans Prebble 7th 4137, *d.* Lock Darkey 6th 15295 *by* Prince of Lock 2nd 2409.

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[1] £20 towards these Prizes were given by the Longhorn Cattle Society.

[2] Perpetual Silver Challenge Cup, value £15, given by the Longhorn Cattle Society for the best Bull or Cow in Classes 168 and 170.

[3] Silver Challenge Cup, value £15, given through the Longhorn Cattle Society for the best Bull or Heifer in Classes 169 and 171.

[4] £20 towards these Prizes were given by the Sussex Herd Book Society.

[5] **Champion Silver Medal given by the Sussex Herd Book Society for the best Bull in Classes 172 and 173.**

Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1314 III. (£3.)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for **Avisford Delight,** born April 8, bred by Percy L. Nevill, Birling Manor, West Malling, Kent; *s.* Birling Delight 3731, *d.* Birling Pet 2nd 15112, *by* Possingworth Broadguage 2968.

Class 174.—*Sussex Cows or Heifers (in-milk), calved in or before* 1917. [3 entries.]

1318 I. (£10, & Champion.[1])—GEORGE T. EATON, Thurston Hall Framfield, Sussex, for **Brownings Stonesdown 1st** 16290, born April 12, 1915, calved March 9, 1920, bred by James Groves, Brownings Manor, Blackboys, Sussex; *s.* The Beau, 2546, *d.* Tutsham Stonesdown 6th 13967 *by* Tutsham Beagle 2527.

1319 II. (£5.)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for **Lock Betsy 6th** 15855, born March 17, 1914, calved Jan. 17, 1920, bred by W. A. Thornton, Lock, Partridge Green, Sussex; *s.* North Chapel Premier 2615, *d.* Lock Betsy 2nd 13327 *by* Tutsham Toreador 2016.

1320 III. (£3.)—MAJOR ELMER SPEED, Knowlton Court, Canterbury, for **Birling Careful 3rd** 13898, born Jan. 21, 1911, calved Jan. 31, 1920, bred by Percy L. Nevill, Birling Manor, West Malling, Kent; *s.* Mayfield Guy 2484, *d.* Birling Careful 11504 *by* Paley Major 2059.

Class 175.—*Sussex Heifers, calved in* 1918. [2 entries.]

1321 I. (£10, & R. N. for Champion.[1])—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for **Lock Darkey 27th,** born Jan. 10, bred by W. A. Thornton, Lock, Partridge Green, Sussex; *s.* Birling Geoffrey 2nd 4252, *d.* Lock Darkey 11th 15988 *by* Prince of Lock 2nd 2198.

1322 II. (£5.)—ALFRED PALMER, West Park, Lingfield, Surrey, for **Bounty,** born March 22, bred by Joseph Godman, Park Hatch, Godalming; *s.* Lock Rufus 3995, *d.* Bonfire 49th 15549 *by* Shillinglee Gold 5th 2540.

Class 176.—*Sussex Heifers, calved in* 1919. [3 entries.]

1323 I. (£10.)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex, for **Avisford Magdala,** born Jan. 17, bred by W. A. Thornton, Lock, Partridge Green, Sussex; *s.* Lock Sussex 4534, *d.* Mary of Lock 12123 *by* Ben of Lock 2279.

1325 II. (£5.)—ALFRED PALMER, West Park, Lingfield, Surrey, for **Somerhill Gaygirl 3rd,** born Jan. 2, bred by Osmond E. D'Avigdor Goldsmid, Somerhill, Tonbridge, Kent; *s.* Bonfire Prince 7th 3872, *d.* Somerhill Gaygirl 2nd 16541 *by* Tutsham Nero 2nd 3526.

1324 III. (£3.)—LORD LECONFIELD, Petworth House, Petworth, for **Petworth Patience 11th,** born Jan. 4; *s.* Newick Nobleman 2nd 4227, *d.* Petworth Patience 9th 16947 *by* Lavington Gold Dust 3414.

Welsh.[2]

Class 177.—*Welsh Bulls, calved on or before November* 30, 1917. [5 entries.]

1326 I. (£10.)—R. M. GREAVES, Wern, Portmadoc, for **Snowdon Idwal 1192,** born August 8, 1916, bred by the University College of North Wales, Aber, Bangor; *s.* Snowdon Arran 903, *d.* Hendre Graceful D4 1263 *by* Duke of Bodowyr 375.

1330 II. (£5.)—CAPT JOHN CHARLES WYNNE-FINCH, M.C., Voelas, Bettws-y-coed, for **Admiral 1144,** born Feb. 14, 1917, bred by the Hon. F. G. Wynn, Glynllivon, Carnarvon; *s.* Glyn Togo 934, *d.* Glyn Blodwen B 2301 *by* Ap Mallard 528.

1328 III. (£3.)—LORD PENRHYN, Penrhyn Castle, Bangor, for **Gunner of Penrhyn 1141,** born Feb. 20, 1917; *s.* Nan Loren Model 808, *d.* Gellian 2nd D 872 *by* Berw B 155.

1327 R. N.—JOHN WILLIAM HOLLAND, Punt-y-Gwair, Abersoch, Carnarvonshire, for **Bodelwa Glyndwr.**

H. C.—1329.

Class 178.—*Welsh Bulls, calved on or between December* 1, 1917, *and November* 30, 1918. [1 entry.]

1331 I. (£10.)—HON. MRS. L. A. BRODRICK, Coed Côch, Abergele, Denbighshire, for **Field Marshall Newydd,** born Aug. 15, 1918, bred by the Hon. F. G. Wynn, Glynllivon, Carnarvon; *s.* Mababele of Penslyn 1133, *d.* Lady Newydd A. 2500 *by* Ap Mallard 528.

Class 179.—*Welsh Bulls, calved on or between December* 1, 1918, *and November* 30, 1919. [6 entries.]

1334 I. (£10.)—LORD HARLECH, Glyn, Talsarnau, for **Glyn Jeremiah,** born Dec. 10, 1918; *s.* Rhydy Gwrnedd Arun 1174, *d.* Glyn Myra 2nd 2088 *by* Meirion 286.

1333 II. (£5.)—R. M. GREAVES, Wern, Portmadoc, for **Wern Ruler,** born Jan. 3, 1919; *s.* Snowdon Idwal 1192, *d.* Wern Pansy 2593 *by* Wern Nonsuch 715.

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[1] Champion Silver Medal given by the Sussex Herd Book Society for the best Cow or Heifer in Classes 174-176.

[2] £30 towards these Prizes were given by the Welsh Black Cattle Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1335 III. (£3.)—H. J. LEWIS, Cerrig Barend, Brynsirneyn, Anglesey, for **Bodelwa Botha**, born May 9 1919, bred by O. E. Hughes, Bodelwa, Ty Croes, Anglesey; *s.* Cwyfan Botha, 1019, *d.* Bodelwa Sally 2676 *by* Madryn King 493.

1336 R. N.—LORD PENRHYN, Penrhyn Castle, Bangor, for **Dumbell of Penrhyn.**
H. C.—1337. C.—1332.

Class 180.—*Welsh Cows or Heifers* (*in-milk*), *calved on or before November* 30, 1917. [3 entries.]

1340 I. (£10.)—LORD PENRHYN, Penrhyn Castle, Bangor, for **Hester 3rd of Penrhyn** 2311, born June 11, 1914, calved Jan. 28, 1920; *s.* Madryn Cawr 488, *d.* Voelas Hester 1242 *by* Eifionydd 417.

1339 II. (£5.)—R. M. GREAVES, Wern, Portmadoc, for **Tynllwyn Dolly 2nd** 2487, born Oct. 30, 1913, calved March 8, 1920, bred by W. Williams, Tynllwyn, Bodorgan, Anglesey; *s.* Penrhyn Tudor 516, *d.* Tynllwyn Nellie 1528 *by* Madryn Major 500.

1338 III. (£3.)—HON. MRS. L A. BRODRICK, Coed Côch, Abergele, Denbighshire, for **Barcud 3rd** 1944, born Aug. 3, 1912, calved March 1, 1920 bred by John Williams, Tyddyn Adda, Brynsuncyn, Anglesey; *s.* Were to dine 337, *d.* Barcud 2nd 1943.

Class 181.—*Welsh Heifers, calved on or between December* 1, 1917, *and November* 30, 1918. [5 entries.]

1343 I. (£10.)—LORD PENRHYN, Penrhyn Castle Bangor, for **Rose 8th of Penrhyn,** born Dec. 21, 1917; *s.* Blodgorn 1145, *d.* Bangor Rose 3rd 1505 *by* Glyn Chief 400.

1344 II. (£5.)—CAPT. JOHN CHARLES WYNNE-FINCH, Voelas, Bettws-y-coed, for **Voelas Quartz**, born Dec. 19, 1917; *s.* Escuan Gwilym 981, *d.* Escuan Nellie 2574 *by* Escuan Erfyl 553.

1342 III. (£3.)—R. M. GREAVES, Wern, Portmadoc, for **Wern Rhianon,** born March 15. 1918; *s.* Bachellyn Glyndwr 1080, *d.* Wern Ideal 1280 *by* Duke of Wellington 294.
H. C.—1341. C.—1345.

Class 182.—*Welsh Heifers, calved on or between December* 1, 1918, *and November* 30, 1919. [10 entries.]

1354 I. (£10.)—CAPT. JOHN CHARLES WYNNE-FINCH, Voelas, Bettws-y-coed, for **Voelas Aylvia**, born March 5, 1919; *s.* Stamp of Penrhyn 1132 *d.* Escuan Princess 2576 *by* Escuan Erfyl 553.

1349 II. (£5.)—JOHN WILLIAM HOLLAND, Punt-y-Gwair, Abersoch, Carnarvonshire, for **Punt-y-Gwair Primrose**, born May 22, 1919; *s.* Bachellyn Goalkeeper 1112, *d.* Molly 4th of Penrhyn 2927 *by* Makeking 181.

1346 III. (£3.)—HON. MRS. L. A. BRODRICK, Coed Côch, Abergele, Denbighshire, for **Crugeran Mair 3rd**, born Dec. 9 1918: *s.* Rupert, *d.* Crugeran Mair 2150,

1355 R. N.—ARTHUR W. WILLMER, Waen Isa, Dolgelly, for **Lady Gay.**
H. C.—1351. C.—1353.

Red Polls.[1]

Class 183.—*Red Poll Bulls, calved in or before* 1917. [5 entries.]

1357 I. (£10, & Champion.[2])—THOMAS BROWN & SON, Marham Hall, Downham, Norfolk, for **Marham Dauntless** 11031, born Jan. 23, 1916; *s.* Gay Davyson 10565, *d.* Davy 308th H1 20697, *by* Majiolini 3600.

1359 II. (£5, & R. N. for Champion.[2])—G. DUDLEY SMITH, Strensham Court, Worcester, for **Strensham Rupert** 11213, born May 7, 1917; *s.* Ashlyns Count 10125, *d.* Strensham Ruperta 23776 *by* Strensham Purple Emperor 10095.

1358 III. (£3.)—BRIG.-GEN. NOEL A. LOWRY CORRY, D.S.O., Rowton Castle, Shrewsbury, for **Sudbourne Alfa** 11216, born April 22, 1917, bred by Kenneth M. Clark, Sudbourne Hall Orford: *s.* Honingham Aldeburgh 3rd 10585, *d.* Sudbourne Fair Lass 243685 *by* Acton Crowfoot 997.

Class 184.—*Red Poll Bulls, calved in* 1918. [6 entries.]

1361 I. (£10.)—MAJOR D. G. ASTLEY, Little Plumstead Hall, Norwich, for **Colworth Orchid** 11294, red, born June 26, 1918, bred by A. E. Bowen, Colworth, Sharnbrook; *s.* Colworth Starfish 10965, *d.* Olive of Normandy 22208 *by* Rockfeller 9853.

1362 II. (£5.)—MAJOR C. L. BLUNDELL, Halsall House, Ormskirk, for **Marham Peanut** 11413, born Feb 24, 1918, bred by T. Brown & Son, Marham Hall, Downham; *s.* Kerrison Surprise 10880, *d.* Marham Pancake 25263 *by* Ashlyns Count 10125.

1364 III. (£3.)—J. G. DUGDALE, The Abbey, Cirencester, for **Necton Gloucester** 11423 born Feb. 13, 1918, bred by R. Harvey Mason, Necton Hall; *s* Shrewsbury 10489, *d.* Godiva 22573 *by* Turk 10115.

1366 R. N.—W. L. HORBURY, Manor House Farm, Upton, Birkenhead, for **Upton Crotchet.**
H. C.—1365.

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[1] £30 towards these Prizes were given by the Red Poll Cattle Society.

[2] Champion Prize of £5 given by the Red Poll Cattle Society for the best Bull in Classes 183-185.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 185.—*Red Poll Bulls, calved in* 1919. [13 entries.]

1377 I. (£10.)—G. DUDLEY SMITH, Strensham Court, Worcester, for **Strensham Wizard,** born Jan 19 : *s* Altrum 10820 *d* Strensham Rosemary 25948 *by* Ashlyns Count 10125.

1375 II. (£5.)—THE DUCHESS OF NEWCASTLE, Clumber Park, Worksop, Notts., for **Hatton Fabian,** born Feb. 2, bred by J. P. Arkwright, Hatton, Warwick ; Hatton Guardian 11155, *d.* Hatton Fable 24035 *by* Acton Hussar 9681.

1369 III. (£3.)—THOMAS BROWN & SON, Marham Hall, Downham, Norfolk, for **Marham Florin,** red, born Jan. 27 ; *s.* Marham Dauntless 11031, *d.* Flutter P. 3 18046 *by* Wentworth 5257.

1376 IV. (£2.)—CAPT. J. O. SHERRARD, Gaddesby Hall, Leicestershire, for **Sudbourne Loyalist,** born Jan. 1, bred by J. Watson, Sudbourne Hall, Orford ; *s.* Acton Loyal 10942, *d.* Rendlesham Royal Gift 23693 *by* Davyson 265th 9230.

1367 R. N.—H. M. THE KING, Sandringham, for **Royal Searchlight.**
H. C.—1368. C.—1370, 1378.

Class 186.—*Red Poll Cows or Heifers (in-milk), calved in or before* 1917. [17 entries.]

1386 I. (£10, & Champion.[1])—J. B. DIMMOCK, Shotford Hall Harleston, Norfolk, for **Shotford Lady Mary** 25872, born Sept 9, 1915, calved April 26, 1920 : *s.* Shotford Alert 10488, *d* Rendlesham Lady Mary 24786 *by* Longford Demoniac 10205.

1383 II. (£5.)—THOMAS BROWN & SON, Marham Hall, Downham, Norfolk, for **Handsome Plantain P1** 24577, born April 7, 1914, calved Jan. 27, 1920 ; *s.* Ashlyns Count 10125, *d.* Plantain Pl 2217 *by* Acis 9878.

1381 III. (£3.)—MAJOR D. G. ASTLEY, Little Plumstead Hall, Norwich, for **Plumstead Priceless** 25834, born Feb. 11, 1916, calved March 13, 1920 ; *s.* Plumstead Pearl 10778, *d.* Plumstead Periwinkle 24472 *by* Acton Dairyman 9890.

1388 IV. (£2.)—THE MARCHIONESS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for **Charming Lass** 24484 born July 13 1914 calved Feb. 24, 1920; *s.* Red David 10069, *d* Charming Davy 12th 22036 *by* Starston Emperor 9335.

1387 R. N.—J. G. DUGDALE, The Abbey, Cirencester, for **Manor Hyacinth.**
H.C.—1389. C.—1391.

Class 187.—*Red Poll Heifers, calved in* 1918. [10 entries.]

1400 I. (£10 and R. N. for Champion.[1])—THOMAS BROWN & SON, Marham Hall, Downham, Norfolk, for **Marham Dainty** 27127, born March 2 ; *s.* Marham Gay Lad 10895 *d.* Marham Daisy H 1 25257 *by* Ashlyns Count 10125.

1398 II. (£5.)—LT.-COL. R. C. BATT, C.B.E., M.V.O., Gresham Hall, Norwich, for **Gresham Aster** 27858 born Feb. 23 ; *s* Honingham Astrologie 2nd 10589, *d.* Letton Mavis 23593 *by* Letton Omen 2nd Davyson 10046.

1406 III. (£3.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Sudbourne Mary** 27312 born June 6, bred by Kenneth M. Clark, Sudbourne Hall, Orford ; *s.* Sudbourne Credit 10796, *d.* Sudbourne Model 23300 *by* Acton Crowfoot 9987.

1405 R. N.—JOSEPH WATSON for **Sizewell Wonder.**
H.C.—1402. C.—1403.

Class 188.—*Red Poll Heifers, calved in* 1919. [18 entries.]

1410 I. (£10.)—MAJOR D. G. ASTLEY, Little Plumstead Hall, Norwich, for **Plumstead Poupée,** born Feb. 28 ; *s.* The Hussar 11233, *d.* Plumstead Powder Puff 25301 *by* Battleaxe 10142.

1423 II. (£5.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Barvin Sal,** born Feb. 21 bred by W. E. Ralston, Barvin, Potters Bar ; *s.* Barvin Warspite, *d.* Barvin Salvia 23832 *by* Ashlyns Wentworth 10263.

1409 III. (£3.)—MAJOR D. G. ASTLEY, for **Plumstead Prosperous,** born Jan. 15 ; *s.* Plumstead Patrol 11047, *d.* Acton Candleberry 21960 *by* Acton Merlin 9657.

1408 IV. (£2.)—MAJOR D. G. ASTLEY, for **Plumstead Perfection,** born Jan. 10 ; *s.* Plumstead Patrol 11047, *d.* Plumstead Priceless 25534 *by* Plumstead Pearl 10778.

1413 R. N.—LT.-COL. SIR MERRIK R. BURRELL, BT., Knepp Castle, West Grinstead, for **Knepp Meadow Dell 1st.**
H.C.—1422. C.—1412, 1414.

Park Cattle.[2]

Class 189.—*Bulls, calved in or before* 1919. [5 entries.]

1428 I. (£10.) CAPTAIN J. H. HOWELL, Trewellwell, Solva, Pem., for **Solva Snowball,** white, born Jan. 15, 1915, bred by G. H. Dawkins, Milcote, Charlbury.

1429 II. (£5.)—MRS. G. LANCASTER, Kelmarsh Hall, Northampton, for **Kelmarsh King,** white and black, born in July, 1918 ; *s* Kelmarsh James 51.

1425 III. (£3.)—SIR CLAUD ALEXANDER, BT., Faygate Wood, Faygate, Sussex, for **Faygate Beaconsfield** white, born April 26 1918 ; *s.* Faygate Brace 13, *d.* Primrose.

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[1] Champion Prize of £5 given by the Red Poll Cattle Society for the best Cow or Heifer in Classes 186-188.

[2] £20 towards these Prizes were given by the Park Cattle Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 190.—*Cows or Heifers (in milk), calved in or before* 1917. [6 entries.]

1430 I. (£10.)—SIR CLAUD ALEXANDER, BT., Faygate Wood, Faygate, Sussex, for **Faygate Alba 226**, white, born in April, 1913, calved May 5, 1920, bred by Major G. E. Gurney, Bawdeswell Hall, Norfolk; *s.* Somerford Duke, *d.* Northrepps Alberta 268.

1434 II. (£5.)—CAPTAIN J. H. HOWELL, Trewellwell, Solva, Pem., for **Solva Snowdrop**, white, born in March, 1915, calved May 21, 1920, bred by Charles Mathias, Lamphey, Pembrokeshire.

1432 III. (£3.) SIR CLAUD ALEXANDER, BT., for **Faygate Swop 2nd 74**, white, born in 1914, calved June 17, 1920; *s.* Faygate Bruce 13, *d.* Swop *by* Northrepps Samson.

C.—1435.

Class 191.—*Heifers, calved in* 1918. [2 entries.]

1436 I. (£10.)—MAJOR G. E. GURNEY, Bawdeswell Hall, Norfolk, for **Bawdeswell Albania 170**, white, born March 17; *s.* Tom, *d.* Faygate Alba 226 *by* Somerford Duke.

1437 II. (£5.)—MRS. G. LANCASTER, Kelmarsh Hall, Northampton, for **Kelmarsh Pansy 2nd**, white and black, born in Oct.

Aberdeen Angus.[1]

Class 192.—*Aberdeen Angus Bulls, calved on or before November* 30, 1917. [4 entries.]

1440 I. (£10, & Champion.[2])—C. T. SCOTT, Buckland Manor, Broadway, Worcs., for **Etruria of Bleaton 41498**, born Dec. 9, 1916, bred by James M. L. Marshall, Bleaton, Blairgowrie; *s.* Baron Beauford 35480, *d.* Etruria of Bleaton 52860 *by* Emilio of Doonholm 31756.

1441 II. (£5.)—ARNOLD T. WATTS, Broadmeadow House, Hutton, Berwickshire, for **Newcombe Laddie 42084**, born Jan. 3, 1917, bred by Lord Penrhyn, Wicken Park, Stony Stratford; *s.* Bountiful 37296, *d.* Beryl of Wicken 53005 *by* Elmiston 29124.

1439 III. (£3.)—GEORGE LAX, Laylands, Scorton, Darlington, for **Ellastone 41311**, black, born Dec. 1, 1916, bred by Viscount Allendale, Bywell Hall, Stocksfield-on-Tyne; *s.* Erdrick Prince 37664, *d.* Elasticity of Bywell 51787 *by* Vellum of Bywell 32650.

1438 R. N.—GEORGE HOYLES, Skidby Manor, Hull, for **Edgar of Goodwood 41222**, born Feb. 21, 1917, bred by the Duke of Richmond and Gordon, Goodwood, Chichester; *s.* Mazer 36456, *d.* Edina of Aldbar 46704 *by* Beaver 2nd of Ardross 26565.

Class 193.—*Aberdeen Angus Bulls, calved on or between December* 1, 1917, *and November* 30, 1918. [9 entries.]

1445 I. (£10.)—J. H. BRIDGES, Langshott, Horley, Surrey, for **Earl of Surrey 43238**, born Dec. 1, 1917; *s.* Gatti 39698, *d.* Ellaline of Langshott 50254 *by* Eland of Ballindalloch 24329.

1446 II. (£5.)—J. J. CRIDLAN, Maisemore Park, Gloucester, for **Eric 2nd of Maisemore 43525**, born Dec. 11, 1917; *s.* Ellegant of Tubberdaly 37578, *d.* Erica of Maisemore 52160 *by* Brave Briton of Maisemore 30218.

1450 III. (£3.)—COLONEL C. W. SOFER-WHITBURN, Addington Park, West Malling, Kent, for **Eaton of Harviestoun 43247**, born Jan. 26, 1918, bred by J. E. Kerr, Harviestoun Castle, Dollar; *s.* Eden Eric of Dalmeny 39284, *d.* Erdna of Harviestoun 49170 *by* Prince of the Wassail 23751.

1433 R. N.—JOHN CATON, Woodbastwick Hall, Norwich, for **Blackberry 346**, white, born Oct. 3, 1912, calved Nov. 15, 1919; *s.* Lancaster, *d.* Bluebell 2nd *by* Prince of Wales.

H.C.—1448. C.—1442.

Class 194.—*Aberdeen Angus Bulls, calved on or between December* 1, 1918, *and November* 30, 1919. [14 entries.]

1454 I. (£10.)—H. L. C. BRASSEY, M.P., Apethorpe Hall, Peterborough, for **Black Knight of Auchterarder 45102**, born April 26, 1919, bred by A. T. Reid, Auchterarder; *s.* Evmar 41558, *d.* Blackbird 5th of Braevail 53362 *by* Prince of Peru 32409.

1457 II. (£5.)—J. J. CRIDLAN, Maisemore Park, Gloucester, for **Elfarcombe of Goodwood 45573**, born Feb. 14, 1919, bred by the Duke of Richmond and Gordon, K.G., Goodwood, Chichester; *s.* Mazer 36456, *d.* Elfis of Goodwood 54025 *by* Benedict of Wicken 34077.

1453 III. (£3).—LIEUT-COL. MATTHEW G. E. BELL, Bourne Park, Canterbury, for **Editor of Bourne 45505**, born Jan. 7, 1919; *s.* Darwin 5th of Claverdon 39190, *d.* Effulgent 4th of Bourne 47723 *by* Jock of Morlich 34704.

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[1] £20 towards these Prizes were given by the Aberdeen Angus Cattle Society.

[2] Champion Gold Medal given by the Aberdeen Angus Cattle Society for the best animal in Classes 192-197.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1461 **IV.** (£2.)—C. T. SCOTT, Buckland Manor, Broadway, Worcs., for **Jolly George of Buckland** 46172, born Jan. 3, 1919; *s.* Proud George, 38595, *d.* Joviality 2nd of Benton 53273 *by* Bright Actor 31512

1462 **R. N.**—C. T. SCOTT, for **Popinjay of Buckland.**
H.C.—1463. **C.**—1458.

Class 195.—*Aberdeen Angus Cows or Heifers (in-milk), calved on or before November* 30, 1917. [11 entries.]

1470 **I.** (£10. Champion,[2] & R. N. for Champion.[1]) JAMES KENNEDY, Doonholm, Ayr, for **Mendoza** 58801, born Feb. 6, 1916, calved Jan. 13, 1920; *s.* Planet of Duthie 35008, *d.* Myrica 32175 *by* Rover of Craibstone 12948.

1475 **II.** (£5.)—EDWARD A. WIGAN, Conholt Park, Andover, Hants, for **Tuberose of Conholt** 55475 born Dec 16, 1913, calved Feb. 23, 1920; *s.* Baron Breslau 30146, *d.* Tuberose of Standen 43477 *by* Elector of Benton 21814

1468 **III.** (£3.)—A W. BAILEY HAWKINS, Stagenhoe Park, Welwyn, Herts., for **Ethenison of Advie** 58415, born Dec. 20, 1915, calved Feb. 3, 1920, bred by Peter Grant, Advie Mains, Advie; *s.* Prince Benison of Ballindalloch 36711, *d.* Etheldreda 40621 *by* Elobeid 21827.

1467 **R. N.**—SIR JOHN R. FINDLAY, K.B.E., Aberlour, Banffshire, for **Pride of Spey 14th.**
H.C.—1465. **C.** 1466, 1472.

Class 196.—*Aberdeen Angus Heifers, calved on or between December* 1, 1917, *and November* 30, 1918. [5 entries.]

1479 **I.** (£10, & R. N. for Champion.[2])—JAMES KENNEDY, Doonholm, Ayr, for **Marsala** 62717, black, born Jan. 15, 1918; *s.* Planet of Duthie 35008, *d.* Molina 56643 *by* Matador of Bywell 34848.

1476 **II.** (£5.)—VISCOUNT ALLENDALE, Bywell Hall, Stocksfield-on-Tyne, for **Grace of Bywell** 61605, born Dec. 21, 1917; *s.* Peasant of Glenfarclas 40166, *d.* Grace of Auchterarder 53067 *by* Romeo of Ballindalloch 29941.

1477 **III.** (£3.)—J. H. BRIDGES, Langshott, Horley, Surrey, for **Jill of Preston 17th** 61770 born Dec. 14, 1917, bred by Rev. C. Bolden, Preston Bissett, Buckingham; *s.* Jacomo 39815, *d.* Jill of Preston 4th 50215 *by* Eloro 30415.

1478 **R. N.**—A. W. BAILEY HAWKINS, Stagenhoe Park, Welwyn, Herts, for **Eva of Stagenhoe.**

Class 197.—*Aberdeen Angus Heifers, calved on or between December* 1, 1918, *and November* 30, 1919. [20 entries.]

1485 **I.** (£10.)—J. J. CRIDLAN, Maisemore Park, Gloucester, for **Eve 3rd of Maisemore,** born May 26, 1919; *s.* Idyll of Maisemore 36219, *d.* Eve of Maisemore 52101 *by* Brave Briton of Maisemore 30218

1489 **II.** (£5.)—JAMES KENNEDY, Doonholm, Ayr, for **Black Begonia** 65038, born Dec. 17, 1918; *s.* Elect of Doonholm 41277, *d.* Biology 52684 *by* Mondello 27193.

1481 **III.** (£3.)—VISCOUNT ALLENDALE, Bywell Hall, Stocksfield-on-Tyne, for **Gracious of Bywell** 63888, born Dec. 10, 1918; *s.* Peasant of Glenfarclas 40166, *d.* Grace of Auchterarder 53067 *by* Romeo of Ballindalloch 29941.

1490 **IV.** (£2.)—JAMES KENNEDY, for **Black Mab** 65039, born Dec. 17, 1918; *s.* Elect of Doonholm 41277, *d.* Bovine Maid 50936 *by* Mondello 27193.

1491 **R. N.**—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Goring, Reading, for **Ellen of Basildon.**
H.C.—1483, 1499. **C.**—1495.

Galloways.[3]

Class 198.—*Galloway Bulls, calved on or before November* 30, 1918. [7 entries.]

1501 **I.** (£10, & Champion.[4])—SIR ROBERT W. BUCHANAN-JARDINE, BT., Castlemilk, Lockerbie, for **Jovial of Blackcombe** 11716, born April 24, 1912, bred by Hugh Fraser, Arkland, Dalbeattie; *s.* Optimist 11033, *d.* Lady Nancy 3rd 17482 *by* Campfollower of Stepford 7476.

1502 **II.** (£5, & R. N. for Champion.[4])—JOHN CUNNINGHAM, Tarbreoch, Dalbeattie, for **Sapphire** 12268, born May 4, 1914, bred by Thomas Biggar and Sons, Chapelton, Dalbeattie; *s.* Pure Gem 11356, *d.* Lizzie 2nd of Chapelton 18464 *by* Lord William of Durhamhill 7108.

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[1] Champion Gold Medal given by the Aberdeen Angus Cattle Society for the best Animal in Classes 192-197.

[2] Champion Gold Medal given by the English Aberdeen Angus Cattle Association for the best animal of the opposite sex to that of the animal awarded the Champion Gold Medal of the Aberdeen Angus Cattle Society in Classes 192-197.

[3] £20 towards these Prizes were given by the Galloway Cattle Society.

[4] Champion Prize of £5 given by the Galloway Cattle Society for the best animal in Classes 198-202.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1503 III. (£3.)—W. B. DONALDSON, Auchineden, Blanefield, Stirlingshire, for **Tarbreoch Cæsar** 13065, born Jan. 20, 1918, bred by John Cunningham, Tarbreoch, Dalbeattie; *s.* Cæsar 10697, *d.* Tarbreoch Doris 3rd 19511 *by* Bondsman 7306.

1504 R. N.—ROBERT GRAHAM, Auchengassel, Twynholm, for **Tarbreoch Worthy.**
H.C.—1505.

Class 199.—*Galloway Bulls, calved on or between December* 1, 1918, *and November* 30, 1919. [6 entries.]

1512 I. (£10.)—D. & J. LITTLE, Corrie Halls, Lockerbie, for **Kennedy of Killearn**, born Dec. 23, 1918, bred by W. B. Donaldson, Auchineden, Blanefield, Stirlingshire; *s.* Cuthbert 11450, *d.* Favourite 22nd of Lochenkit 18802 *by* Othelo of Kilquhanity 8469.

1508 II. (£5.)—ROSALIND COUNTESS OF CARLISLE, Askerton Castle, Brampton, Cumb., for **Skirmisher** 14315, born Jan. 7, 1919, bred by Robert Shepley-Shepley, Troquhain, Balmaclellan; *s.* Nero of Dalwyne 13023, *d.* Lavender 8th of Hensol 22347 *by* Fleur de Lys 11027.

1513 III. (£3.)—ROBERT WILSON, 30 Cambridge Street, Newcastle-on-Tyne, for **Sir Digby 2nd of Craigneston** 14155, born Feb. 14, 1919, bred by Francis N. M. Gourlay, Milnton, Tynron; *s.* Raleigh of Killearn 11988, *d* Fiona of Craigneston 24641 *by* Cuthbert 2nd 11696.

1509 R. N.—ROBERT GRAHAM, Auchengassel, Twynholm, for **Cameron 3rd of Tundergarth Mains.**

Class 200.—*Galloway Cows or Heifers (in-milk), calved on or before November* 30, 1917. [7 entries.]

1516 I. (£10.)—SIR ROBERT W. BUCHANAN-JARDINE, BT., Castle Milk, Lockerbie, for **Dorothy of Castlemilk** 24676, born Dec. 3, 1914, calved March 10, 1920; *s.* Archer 5th of Castlemilk 11010, *d.* Dorothy 5th of Stepford 22155 *by* Cairn of Stepford 8888.

1517 II. (£5.)—JOHN CUNNINGHAM, Tarbreoch, Dalbeattie, for **Maggie Lauder 12th of Tarbreoch** 23325, born May 5, 1913, calved May 18, 1920; *s.* Challenger 10837, *d.* Maggie Lauder of Tarbreoch 17466 *by* MacDougall 4th of Tarbreoch 6841.

1519 III. (£3.)—ROBERT GRAHAM, Auchengassel, Twynholm, for **Nora of Auchengassel** 22596, born April 1, 1911, calved April 9, 1920, bred by B. H. Lane, Rush Hall, Limavady; *s.* Cilix 10020, *d.* Our Sally 18674 *by* Brucina of Drumlanrig 8045.

1520 R. N.—ROBERT GRAHAM, Capel of Logan, Half Morton, Canonbie, for **Logan Lady 3rd.**
H. C.—1514, 1518.

Class 201.—*Galloway Heifers, calved on or between December* 1, 1917, *and November* 30, 1918. [7 entries.]

1523 I. (£10.)—JOHN CUNNINGHAM, Tarbreoch, Dalbeattie, for **Netty 42nd of Tarbreoch** 26354, born Jan. 20, 1918; *s.* Sapphire 12268, *d.* Netty 39th of Tarbreoch 22586 *by* Sweepstakes 10001.

1535 II. (£5.)—ROBERT GRAHAM, Chapel of Logan, Half Morton, Canonbie, for **Logan Lady 5th**, 26163, born April 1, 1918; *s.* Owen of Barlae 12498, *d.* Logan Lady 2nd 22648 *by* Ivanhoe 10767.

1524 III. (£3.)—JOHN CUNNINGHAM, for **Tarbreoch Doris 13th** 26357, born March 3, 1918; *s.* Sapphire 12268, *d.* Tarbreoch Doris 3rd 19511 *by* Bondsman 7306.

1526 R. N.—ROBERT GRAHAM, for **Logan Lady 6th.**
H.C.—1522, 1527.

Class 202.—*Galloway Heifers, calved on or between December* 1, 1918, *and November* 30, 1919. [6 entries.]

1531 I. (£10.)—W. B. DONALDSON, Auchineden, Blanefield, Stirlingshire, for **Olivia of Killearn** 26897, born Dec. 14, 1918; *s.* Cuthbert 11450, *d.* Rowena 21736 *by* Cornerstone of Stepford 10013.

1528 II. (£5.)—SIR ROBERT W. BUCHANAN-JARDINE, BART., Castle Milk, Lockerbie, for **Chloris of Castlemilk** 27020, born Jan. 21, 1919; *s.* Jovial of Blackcombe 11716, *d.* Claire 2nd of Castlemilk 23487 *by* Baron 10033.

1529 III. (£3.)—JOHN CUNNINGHAM, Tarbreoch, Dalbeattie, for **Tarbreoch Zena 3rd** 26879, born Jan. 20, 1919; *s.* Sapphire 12268, *d.* Tarbreoch Zena 22070 *by* Sweepstakes 10001.

1530 R. N.—W. B. DONALDSON, for **Clare 4th of Killearn.**
H. C.—1532, 1533.

Highland.

Class 203.—*Highland Bulls, calved in or before* 1919. [No entry.]

204.—*Highland Cows or Heifers* (*in milk.*) [No entry.]

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Ayrshires.[1]

Class 205.—*Ayrshire Bulls, calved in or before* 1919. [4 entries.]

1534 I. (£10.)—MRS. HOUISON CRAUFURD, Dunlop House, Dunlop, Ayrshire, for **Howie's Hot Stuff** 17895, white and brown, born March 2, 1918, bred by Thomas Logan, Low Milton, Maybole, Ayrshire: *s.* Howie's Blockade 15275, *d.* Carston Mary Anne 41328, *by* High Tarbeg Coronation 9377.

1536 II. (£5.)—ROBERT MARSHALL, Mains of Kilmaronock, by Alexandria, Dumbartonshire, for **Cawhillan Flashlight** 18197, white and brown, born Jan. 27, 1918, bred by William Watson, High Tarbeg, Ochiltree: *s.* Barboigh Daylight 16350, *d.* High Tarbeg Cherry 43173 *by* High Tarbeg Coronation 9377.

1535 III. (£3.)—WILLIAM GIBSON, Moorside Farm, Worston, Clitheroe, Lancs., for **Birnieknowe Snowball** 17570, white and brown, born Feb. 11, 1918, bred by Thomas Baird, Birnieknowe, Auchinleck, Ayrshire: *s.* Garsclough Dreadnought 15069, *d.* Birnieknowe Gay Lass 3rd 38052 *by* Birnieknowe President 6808.

Class 206a.—*Ayrshire Cows or Heifers* (*in-milk*). [12 entries A and B.]

1538 I. (£10.)—MRS. HOUISON CRAUFURD, Dunlop House, Dunlop, Ayrshire, for **Bruchag Pearl 2nd**, A 2070, white, born April 23, 1912, calved June 4, 1920, bred by Mrs. Mackay, Bruchag, Rothesay; *s.* Bruchag Marquis 10176, *d.* Bruchag Pearl B 2628 *by* Bruchag Ardvne 7453.

1542 II. (£5.)—WILLIAM GIBSON, Moorside Farm, Worston, Clitheroe, Lancs., for **Moorside Atalanta 3rd** 51696, black and white, born Aug. 3, 1914, calved May 21, 1920; *s.* Moorside Albanian 9780, *d.* Moorside Atalanta 32530 *by* Clockston Tam 6545.

1541 III. (£3.)—WILLIAM GIBSON, for **Moorside Acacia** 32527, brown, born April 23, 1912, calved May 13, 1920: *s.* Willoxton St. John 8053, *d.* Willoxton Jean 2nd 27741 *by* Willoxton Morrison 7154.

Class 206b.—*Ayrshire Cows or Heifers* (*in-calf*).

1547 I. (£10.)—JACOB S. MURRAY, Dalgig Farm, New Cumnock, Ayrshire, for **Carston Rhoda** 52271, brown and white, born April 7, 1915, in calf; *s.* St. Thomas 7904, *d.* Cinderella 2nd 36825 *by* Carston Merry King 8307.

1545 II. (£5.)—ADAM W. MONTGOMERIE, Lessnessock, Ochiltree, Ayrshire, for **Redhills Beatrice**, brown and white, born Jan. 14, 1911, in-calf, bred by Homer Young, Redhills, Dumfries; *s.* Royal Chief 8632, *d.* Redhills Kate 21538 *by* Redhills Substance 5235.

1549 III. (£3.)—MUNGO SLOAN, Douglas Hall, Ecclefechan, Dumfries-shire, for **Douglas Hall Dandy 2nd**, brown and white, born Feb. 28, 1916, in-calf; *s.* Drumsen Albert 10945, *d.* Douglas Hall Daisy 2nd 36429 *by* Castlemains Wheel of Fortune 6343.

1540 R. N.—MRS. HOUISON CRAUFURD, Dunlop House, Dunlop, Ayrshire, for **Hobsland Mary 7th.**

British Friesians.[2]

The letters F.R.S. after the number of an animal indicate that such animal is registered in the Friesch Rundvee Stamboek (Friesland Cattle Herd Book) Zwartebonte (Black and White) Section.

The letters H., F.R.S., refer to the Hulpstamboek (Auxiliary Herd Book) Zwartebonte (Black and White) Section of the Friesch Rundvee Stamboek.

Unless otherwise stated, the numbers refer to the British Friesian Herd Book.

Class 207.—*British Friesian Bulls, calved in or before* 1917. [12 entries.]

1554 I. (£10.)—EATON & MUGGERIDGE, Thurston Hall, Framfield, Sussex, for **Kirkhill (imported) Karel 2nd** 4051, born Dec. 6, 1913, bred by R. Brandsma, Lokkum, Holland; *s.* Karel 5264 F.R.S., *d.* Jansma 5th 15138 F.R.S. *by* Jelmer 3235 F.R.S.

1551 II. (£5.)—A. & J. BROWN, Haydon Hill Farm, Aylesbury, for **Petygards (imported) Bles Albert** 4321, born Nov. 16, 1913, bred by Jan Boersma, Friens, Holland; *s.* Albert 1306 H., F.R.S., *d.* Anna 3rd 10955 F.R.S. *by* Jan 2591 F.R.S.

1558 III. (£3.)—R. W. J. SUTHERLAND, Gadairwen, Croesfaen, Glam., for **Colton Vic Bram 3rd** 7547, born March 16, 1917, bred by Hugh Brown, Colton Mains, Dunfermline; *s.* Colton (imported) Vic Bram 5705, *d.* Colton Bramble 2nd 14260 *by* Fairlight Wilhelm 139.

1555 IV. (£2.)—FREDERICK NEAME, The Offices, Macknade, Faversham, Kent, for **Golf Boter 4th** 5131, born Nov. 20, 1915, bred by John Bromet, Golf Links Farm, Tadcaster; *s.* Golf (imported) Botermijn 3919, *d.* Garton Fullpail 8154 *by* Garton Baxendale 163.

1550 R. N.—J. H. BEAN, C.B.E., Chaddesley Corbett, Kidderminster, for **Glenanne Pioneer.**

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[1] £20 towards these Prizes were given by the Ayrshire Cattle Herd Book Society.

[2] £35 towards these Prizes were given by the British Friesian Cattle Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 208.—*British Friesian Bulls, calved in* 1918. [8 entries.]

1563 I. (£10, & Champion.[1])—JAMES F. HUGHES, Lea Hall, Mollington, Chester, for **Bulkeley Klaske's Ceres** 9227, born July 21, bred by I. B. & H. L. Jarmay, Bulkeley Hall Malpas: *s.* Bulkeley (imported) Mietje's Ceres 3625, *d.* Bulkeley (imported) Klaske 5th 17118 *by* De Hoop 5106 F.R.S.

1563A II. (£5, & R. N. for Champion.[1])—WILLIAM CHARLES JONES, Lyme Green, Macclesfield, for **Tarvin Pel Klaas 2nd** 10701, born Feb. 26, bred by G. B. Radcliffe, Pool Bank, Tarvin; *s.* Tarvin (imported) Pel Klaas 4521, *d.* Tarvin (imported) Zwarte Hatsumer 19408 *by* Max 5755 F.R.S.

1562 III. (£3.)—W. A. BROCKLEHURST, Henbury Park, Macclesfield, for **Hedges Bonnie Fokke** 9863, born Feb. 23, bred by A. & J. Brown, Hedges Farm, St. Albans; *s.* Hedges (imported) Fokke 2nd 3993, *d.* Hedges Bonnie Annie 1698 *by* Hedges Hawkrigg Duke 2[illegible]3.

1566 R. N.—R. W. J. SUTHERLAND, Gadairwen, Croesfaen, Glam., for **Lochlands Reputation.**

C.—1568.

Class 209.—*British Friesian Bulls, calved in* 1919. [12 entries.]

1571 I. (£10.)—PENRHYN STANLEY CONYERS, Hill Top Hall, Pannal, Harrogate, for **Colton Bert Bram** 11349, born Jan. 27, bred by Hugh Brown, Colton Mains, Dunfermline; *s.* Terling (imported) Vic Bertus 4541, *d.* Colton Bram 23926 *by* Colton (imported) Vic Bram 3705.

1578 II. (£5.)—E. SEHMER, Toat, Pulborough, for **Saltcote Johan** 12649, born Jan. 7, bred by Francis B. May, Saltcote Hall, Heybridge, Maldon; *s.* Wigginton Johan 7165, *d.* Hedges Moss Rose 1844 *by* Hedges Tatton King 321.

1577 III. (£3.)—SIR JOHN RAMSDEN, Bt. (HACHE HERD), Bulstrode Park, Gerrards Cross, Bucks, for **Clockhouse King Akrin** 11321, born Jan. 22, bred by Trevor Williams, Pynesfield Manor, West Hyde, Rickmansworth; *s.* Clockhouse Rinlod, 7513, *d.* Garton (imported) Akke 6th 17794 *by* Albert 2nd 5611 F.R.S.

1579 IV. (£2.)—CHRISTOPHER WORDSWORTH, Brooklands, South Godstone, Surrey, for **Brooklands Ynte** 11145, born March 1; *s.* Brooklands Job-o-Work 4047, *d.* Brooklands Fryleigh 27724 *by* Kingswood (imported) Ynte 4047.

1575 R. N.—EDWARD LITTLER, Lea Manor Farm, Mollington, Chester, for **Tarvin Invincible.**

Class 210.—*British Friesian Cows (in-milk), calved in or before* 1916.

[15 entries.]

1583 I. (£10, & Champion.[2])—A. & J. BROWN, Haydon Hill Farm, Aylesbury, for **Hedges Dutch Stately** 24956, born Nov. 25, 1916, calved Jan. 16, 1920; *s.* Hedges, (imported) Fokke 2nd 3993, *d.* Hedges Stately 1916.

1589 II. (£5 & R. N. for Champion[2].)—THE HACHE HERD, Muntham Court, Worthing, Sussex, for **Brooklands (imported) Sietske 4th** 17052, born April 7, 1913, calved Dec. 29, 1919, bred by J. J. Oostra, Mantgum, Holland; *s.* Bertus 5935 F.R.S., *d.* Sietske 22599 H., F.R.S.

1587 III. (£3.)—EATON & MUGGERIDGE, Thurston Hall, Framfield, Sussex, for **Kirkhill Lucy 2nd** 25244, born Feb. 25, 1916, calved May 31, 1920, bred by Dr. William Sinclair, Kirkhill, Nigg, by Aberdeen; *s.* Kirkhill (imported) Karel 2nd 4051, *d.* Kirkhill Lucy 9370 *by* Colton Queen's Own 97.

1591 IV. (£2.)—OLYMPIA AGRICULTURAL COMPANY LIMITED, Sudbourne Hall, Orford, Suffolk, for **Colton Royal Rita** 6860, born April 7, 1912, calved May 10, 1920, bred by Hugh Brown, Colton Mains, Dunfermline; *s.* Fairlight Wilhelm 139, *d.* Colton Rita 624.

1584 R. N.—A. & J. BROWN, Hedges Farm, St. Albans, Herts., for **Hedges Friesland Queen.**

C.—1585, 1588.

Class 211.—*British Friesian Heifers (in-milk), calved in* 1917 *or* 1918.

[14 entries.]

1607 I. (£10.)—W. & R. WALLACE, Knebworth, Herts, for **Knebworth Countess** 29534, born June 23, 1917, calved Jan. 16, 1920; *s.* Wigginton (imported) Johan 4637, *d.* Southill Countess 3542 *by* Southill Excelsior 607.

1598 II. (£5.)—LIEUT.-COL. W. E. HARRISON, Wychnor Park, Burton-on-Trent, for **Colton Bram-Roylette 2nd** 28040, born March 27, 1917, calved Jan. 3, 1920, bred by Hugh Brown, Colton Mains, Dunfermline: *s.* Colton (imported) Vic Bram 3705, *d.* Colton Roylette 6862 *by* Colton Puritan 95.

1605 III. (£3.)—E. SEHMER, Toat, Pulborough, Sussex, for **Wigginton America** 31496, born Dec. 30, 1917, calved May 2, 1920; *s.* Wigginton (imported) Johan 4637, *d.* Knebworth Amelia 3rd 21652 *by* Lothian General 2943.

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[1] Champion Silver Medal given by the British Friesian Cattle Society for the best Bull in Classes 207-209.

[2] Champion Silver Medal given by the British Friesian Cattle Society for the best Cow or Heifer in Classes 210-212.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1604 IV. (£2.)—JAMES RUSSEL, Mapleton, Four Elms, Edenbridge, Kent, for **Tredegar Thistle 2nd** 31342, born May 5, 1917, calved March 20, 1920, bred by John T. Chambers, Wyldingtree, North Weald, Essex: *s.* Tredegar (imported) Prince of Holland 4579, *d.* Tredegar Thistle 19636 *by* Tredegar Courage 779.

1597 R. N.—A. & J. BROWN, Hedges Farm, St. Albans, for **Cymric St. Malo.**

Class 212.—*British-Friesian Heifers, calved in* 1919. [36 entries.]

1621 I. (£10.)—THE HACHE HERD, Muntham Court, Worthing, Sussex, for **Clockhouse Vic Rinze** 37868, born March 26, bred by Trevor Williams, Pyne-field Manor, Rickmansworth; *s.* Clockhouse (imported) Vic Wouter 3691, *d.* Clockhouse (imported) Rinze 7th 17234 *by* Buringa 50th 5511 F.R.S.

1640 II. (£5.)—G. HOLT THOMAS, Northdean House, Hughenden, Bucks, for **Kingswood Ceres Myrtle** 39934, born Jan. 28, bred by Horace Hale, Findon, Worthing, Sussex; *s.* Hedges Second Ceres 6427, *d.* Kingswood Myrtle 9294 *by* Kingswood Prince 341.

1627 III. (£3.)—OLYMPIA AGRICULTURAL COMPANY, LIMITED, Sudbourne Hall, Orford, Suffolk, for **Sudbourne Dairymaid** 42132, born Jan. 12; *s.* Golf (imported) Botermijn 3919, *a.* Hedges Dairymaid 1742.

1645 IV. (£2.)—CHRISTOPHER WORDSWORTH, Brooklands, South Godstone, Surrey, for **Brooklands Princess Afke** 37502, born March 27: *s.* Tredegar (imported) Prince of Holland 4579, *d.* Brooklands Saake 20332 *by* Verwachting 7059 F.R.S.

1614 V. (£2.)—A. & J. BROWN, Hedges Farm, St. Albans, for **Hedges Albert Nancy**, born Feb 4; *s.* Petygards (imported) Bles Albert 4321, *d.* Hedges Nancy 5th 21390 *by* Hedges Bushman 265.

1618 R. N.—HERBERT W. DAKING, White Hall, Thorpe-le-Soken, Essex, for **Pomona Cynthia.**

C.—1644.

Jerseys.[1]

N.B.—In the Jersey Classes, the number inserted within brackets after the name of an animal indicates the number of such animal in the Island Herd Book. A number without brackets indicates that the animal is registered in the English Jersey Herd Book.

Class 213.—*Jersey Bulls, calved in or before* 1917. [6 entries.]

1649 I. (£10, & Champion.[2])—MAJOR THE HON. HAROLD PEARSON, Cowdray Park, Midhurst, Sussex, for **Pioneers Noble** 12416, dark fawn, born March 21, 1915, bred by E. E. Leonard, St. Owen's, Jersey; *s.* Golden Fern's Noble 10626, *d.* Bontilliere F.S.H.C. 9670.

1651 II. (£5.)—BRIG.-GEN. J. T. WIGAN, C.B., C.M.G., D.S.O., M.P., Danbury Park, Chelmsford, Essex, for **Red Ensign** (vol. 29, p. 28), whole colour born May 2, 1917, bred by H. V. M. Clark, Lyndsays, Ingatestone, Essex; *s.* Illustrious 10289, *d.* Wotton Red Egg *by* Red Cloud 11818.

1647 R. N.—MRS. H. E. JEROME, Bilton Hall, Tockwith, York, for **Pioche.**

Class 214.—*Jersey Bulls, calved in* 1918. [6 entries.]

1655 I. (£10, & R. N. for Champion.[2])—MISS C. BYNG LUCAS, Sutton House, Iford, Lewes, for **Culverden Pioneer**, mulberry, born April 18; *s.* Pioneer's Noble 12416, *d.* La Sente's Fairy (vol. 29, p. 295) *by* Self Acting 11147.

1656 II. (£5.)—LADY LUDLOW, Luton Hoo, Beds., for **Fairy Lad**, whole colour (vol. 30, p. 123), born May 13; *s.* Cutis Lad 12261, *d.* Fairness *by* China's Fairy Boy 9869.

1653 III. (£3.)—J. G. DUGDALE, The Abbey, Cirencester, for **Bombshell** (vol. 30, p. 106), whole colour, born March 18, bred by Sir E. D. Stern, Fan Court, Chertsey; *s.* Wotton Ashiel 12504, *d.* Belinda *by* Golden Bean 9247.

1657 R. N.—MRS. EDGAR WATTS, Eastwood Park, Falfield, Glos., for **Wotton Beautious Cloud** (vol. 30, p. 39).

Class 215.—*Jersey Bulls, calved in* 1919. [10 entries.]

1665 I. (£10.)—R. BRUCE WARD, Godinton, Ashford, Kent, for **Pilgrim**, broken colour, born April 14; *s.* Prometheus, *d.* Evergreen (vol. 28, p. 86) *by* Catillon's Prince 11639.

1660 II. (£5.)—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for **Bayleaf's Boy** 5649, brown, born Jan. 11, bred by A. J. Norman, Trinity, Jersey; *s.* The Cid 5316, *d.* Bayleaf 74th 22131 *by* Financial Noble 4842.

1661 III. (£3.)—LADY LUDLOW, Luton Hoo, Beds., for **Marston Cowslip**, whole colour, born June 17, bred by W. Wilkins, Long Marston, Tring; *s.* General Cowslip 10960, *d.* Javas Witch 23579 *by* Beechside You'll Do 5192.

1667 IV. (£2.)—BRIG.-GEN. J. T. WIGAN, C.B., C.M.G., D.S.O., M.P., Danbury Park, Chelmsford, Essex, for **Danbury Red King**, whole colour, born June 9; *s.* Red Ensign, *d.* Mitylene (vol. 27, p. 85) *by* Topsy's Noble 1011[illegible].

1662 R. N.—MRS. C. M. MCINTOSH, Havering Park, Romford, Essex, for **Cardiff Favoray.**

H. C.—1659.

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[1] £10 towards these Prizes were given by the English Jersey Cattle Society.

[2] Champion Prize of £5 given by the English Jersey Cattle Society for the best Bull in Classes 213-215.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 216.—*Jersey Cows (in-milk), calved in or before* 1916. [29 entries.]

1674 **I. (£10, & Champion.[1])**—MRS. EVELYN, Wotton House, Dorking, for **Dairymaid** (vol. 26, p. 267), whole colour, born June 1, 1912, calved March 29, 1920, bred by A. Ruggles Brise, Spains Hall, Braintree; *s.* Midsummer 11064, *d.* Daffodil 3rd *by* Royal Reward 9413.

1676 **II. (£5, R. N. for Champion,[1] & Special.[2])**—MRS. EVELYN, for **Wotton Pink May** (vol. 30, p. 400), broken colour, born July 25, 1916, calved May 31, 1920; *s.* Red Cloud 11818, *d.* Lady Mary *by* Royal Reward 9413.

1686 **III. (£3.)**—MRS. RUDD, Felbridge Park Farm, East Grinstead, Sussex, for **Meadow Vale Pride** (vol. 29, p. 313), whole colour, born April 1, 1913, calved March 24, 1920, bred by H. L. Palmer, Graoville, Jersey; *s.* Cyclone 3rd (11274), *d.* Regondame's Pride (13740) *by* Irvington (3656).

1690 **IV. (£2.)**—R. BRUCE WARD, Godinton, Ashford, Kent, for **Restful 2nd** (vol. 25, p. 448), whole colour, born July 9, 1911, calved May 10, 1920, bred by Mrs. Eyres Monsell, Dumbleton, Evesham; *s.* Dorando 10221, *d.* Restful *by* Pedlar 9331.

1695 **V. (£2.)**—MRS. EDGAR WATTS, Eastwood Park, Falfield, Glos., for **Duckwing** (vol. 24, p. 291), whole colour, born Aug. 30, 1910, calved April 29, 1920, bred by Mrs. Smith Barry, Pewsey; *s.* Golden Swan 10260, *d.* Daffodil *by* Groufille's Boy 6582.

1679 **R. N.**—MRS. C. M. MCINTOSH, Havering Park, Romford, Essex, for **Sweet Rose.**

H. C.—1683. **C.**—1668, 1669, 1689.

1673 **R. N. for Special.[2]**—W. M. CAZALET, Fairlawne, Tonbridge, for **Fairlawne Hussy** (vol. 30, p. 273), broken colour, born Aug. 8, 1916, calved Feb. 19, 1920; *s.* Sir Toby 12154, *d.* Hussy 13th *by* MacDougal 9333.

Class 217.—*Jersey Heifers (in-milk), calved in* 1917. [15 entries.]

1702 **I. (£10.)**—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for **Reception' Heather** 24409, broken colour, born Jan. 10, calved May 19, 1920 bred by James Manning, St. Mary's Jersey; *s.* Reception's You'll Do 5124, *d.* Heather Moon (10982) *by* Plymouth Lad.

1704 **II. (£5.)**—W. M. CAZALET, Fairlawne, Tonbridge, for **Rosy's General Maid,** broken colour, born May 22, calved May 14, 1920 bred by A. E. Le Blancq, St. Owen, Jersey; *s.* Rosy's General Cowslip (5369), *d.* Mill Maid 5th (19613).

1710 **III. (£3.)**——R. BRUCE WARD, Godinton, Ashford, Kent, for **Maytham Pauline** (vol. 29, p. 105), whole colour, born July 20, calved March 5, 1920, bred by the Rt. Hon. H. J. Tennant, Rolvenden, Kent; *s.* Strathcona 12772, *d.* Christmas Rush *by* Sweet Bread Lad 2nd 11560.

1703 **R. N.**—W. M. CAZALET, for **Frontiere's Maid.**

H. C.—1701, 1705, 1706.

Class 218.—*Jersey Heifers (in-milk), calved in* 1918. [13 entries.]

1715 **I. (£10.)**—W. M. CAZALET, Fairlawne, Tonbridge, for **Ciddie Girl,** whole colour, born May 15, calved April 20, 1920, bred by J. Le Ruez, St. Owen, Jersey: *s.* The Cid 19473, *d.* Adela's Oxford Girl *by* Oxford Majesty 4057.

1720 **II. (£5.)**—MRS. C. M. MCINTOSH, Havering Park, Romford, Essex, for **Volunteer's Revival,** whole colour, born March 26, calved May 29, 1920, bred by J. Lucas, Jersey: *s.* Jersey Volunteer 5354, *d.* Revival 3rd 16825.

1722 **III. (£3, & Special.[3])**—MRS. RUDD, Felbridge Park Farm, East Grinstead, Sussex, for **Golden Duchess** whole colour, born March 11, calved May 13, 1920; *s.* Fire King 12815, *d.* Goddington Duchess *by* Golden Chance's Noble 10256.

1717 **IV. (£2, & R. N. for Special.[3])**—MRS. EVELYN, Wotton House, Dorking, Surrey, for **Wotton Sand Maiden,** whole colour, born May 20, calved June 13, 1920; *s.* Wotton Sandy 12814, *d.* Wotton Readymade (vol. 30, p. 401) *by* Red Cloud 11188.

1712 **R. N.**—A. E. BOND, Wannerton Kidderminster, for **Cowslip's Hussy.**

C.—1714.

Class 219.—*Jersey Heifers, calved in* 1919. [11 entries.]

1726 **I. (£10.)**—MRS. EVELYN, Wotton House, Dorking, for **Wotton Sandaisy,** whole colour, born June 24; *s.* Wotton Sandy 12814, *d.* Wotton Red Daisy *by* Red Cloud 11818.

1730 **II. (£5.)**—MAJOR THE HON. HAROLD PEARSON, Cowdray Park, Midhurst, Sussex, for **Marston Lucinda,** broken fawn, born June 13, bred by W. Wilkins, Long Marston, Tring, Herts.: *s.* Sleeper 5448, *d.* Rosy Lucinda 3rd *by* Rosy's General Cowslip 5369.

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[1] Champion Prize of £5 given by the English Jersey Cattle Society for the best Cow or Heifer in Classes 216-219.

[2] Special Prize of £10 given by the English Jersey Cattle Society for the best Cow in Class 216, bred by Exhibitor and sired in Great Britain or Ireland.

[3] Special Prize of £10 given by the English Jersey Cattle Society for the best Heifer in Classes 217 and 218, bred by Exhibitor and sired in Great Britain or Ireland.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1729 III. (£3.)—MRS. C. M. MCINTOSH, Havering Park, Romford, Essex, for **Poppy 3rd,** whole colour, born May 19, bred by R. Barclay, High Leigh, Hoddesdon, Herts.; *s.* Silverlock's Guard Duke 12708, *d.* Poppy 2nd.

1733 IV. (£2.)—R. BRUCE WARD, Golinton, Ashford, Kent, for **Boselle,** whole colour, born April 10, *s.* Boaz 12840, *d.* Capsella *by* Capsicum 10892.

1731 R. N.—J. H. N. ROBERTS, Waybeards Farm, Harefield, Middlesex, for **Masterman's Pet.**

H.C.—1732.

Guernseys.[1]

N.B.—Unless otherwise stated, the numbers refer to the English Guernsey Herd Book.

Class 220.—*Guernsey Bulls, calved in* or *before* 1917. [9 entries.]

1736 I. (£10, & Champion.[2])—MRS R. C. BAINBRIDGE, Elfordleigh, Plympton, S. Devon, for **Hamill of Marazion** 3334, fawn and little white, born Dec. 14 1916, bred by Lady Margaret Boscawen, Tregye, Perranwell, Cornwall; *s.* Tregonning Good Friday 2nd 2661, *d.* Fancy 7634 *by* Eryngium 2016.

1743 II. (£5.)—MRS. PRATT BARLOW, Lynchmere House, Haslemere, for **Prince of Vimiera** 3577, fawn and white, born June 27 1917, bred by F. Belloir, Vimiera, St. Peters, Guernsey; *s.* Valentines Honour of the Passée 3826, *d.* Dolly Gray 3rd of Vimiera 14726 P.S., R.G.A.S. *by* Flora's Sequel 2nd of Vimiera 2221 R.G.A.S.

1741 III. (£3.)—MRS W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for **Murrell Governors King of L'Etiennerie** 3765, lemon, born April 8, 1917, bred by Mrs. T. Le Provost, L'Etiennerie, Castel, Guernsey; *s.* Governors Kings Prize 3473 P.S., R.G.A.S., Lily 2nd of Les Bordages 13263, P.S., R.G.A.S. *by* Governor of the Chene 1297 P.S., R.G.A.S.

1744 R. N.—O. PORTMAN RUBECK, Valencia, Meath Green Lane, Horley, Surrey, for **Elfordleigh Regal.**

H.C.—1737.

Class 221.—*Guernsey Bulls, calved in* 1918. [9 entries.]

1751 I. (£10.)—MRS. PRATT-BARLOW, Lynchmere House, Haslemere, Surrey, for **Governor 4th Des Ruettes** 3718, fawn and white, born May 23, bred by Mrs J. Nattel, Les Ruettes, St. Saviours, Guernsey; *s.* Polly's Governor des Ruettes 3906 P.S., R.G.A.S., *d.* Beauty of the Ruettes 6534, P.S., R.G.A.S. *by* Golden Noble 2nd 1524 R.G.A.S.

1746 II. (£5.)—G. F. FERRAND, Morland Hall, Alton, Hants, for **Victor 3rd of the Barras** 4075, fawn, born June 14, bred by T. Foss, The Barras, Vale, Guernsey; *s.* Sequel's Mascot 3301 P.S., R.G.A.S., *d.* Moss Rose 6th of the Barras 9697 P.S., R.G.A.S. *by* Sequel's Monogram 1878 P.S., R.G.A.S.

1749 III. (£3.)—THE EARL OF HAREWOOD, Harewood, Leeds, for **Hiawatha of Les Grantes** 3960, fawn and white, born Feb 1, bred by J. L. Le Page, Les Grantes, Castel, Guernsey; *s.* Valentines Honour of the Passee 3826, *d.* Lily of Les Bordages 3835 F.S., R.G.A.S.

1745 R. N.—MRS. LIONEL CORBETT, Hockley House, Alresford, Hants, for **Fancy's Dream.**

H. C.—1747. C.—1753.

Class 222.—*Guernsey Bulls, calved in* 1919. [11 entries.]

1754 I. (£10, & R. N. for Champion.[2])—H. R. H. THE DUCHESS OF ALBANY, Claremont, Esher, Surrey, for **Claremont Eros** 3870, fawn and white, born Sept. 6th; *s.* Wickham May King 3rd 3020, *d.* Hartfield Venus 8538 *by* Gay Boy 2020.

1761 II. (£5.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for **Murrell Recruit** 3995, dark fawn, born June 26; *s.* Murrell Governors King of L'Etiennerie 3765, *d.* Murrell Romance 12987 *by* Murrell Gay Boy 3192.

1763 III. (£3.)—G. PERCY SANDAY, Puddington Hall, Neston, Birkenhead, for **Puddington Jewel** 4011, fawn and white, born March 21, bred by P. Martineau, Broom Hall, Sunningdale, Berks; *s.* Hurst Freda's Jewell 2nd 3543, *d.* Ivy May Rose of the Masse 16225 *by* Governor of Carteret 342.

1759 R. N.—A. W. BAILEY HAWKINS, Stagenhoe Park, Welwyn, Herts, for **Golden Noble of the New Volante.**

H.C.—1760.

Class 223.—*Guernsey Cows (in-milk), calved in or before* 1915. [10 entries.]

1767 I. (£10, & R. N. for Champion.[3])—G. F. FERRAND, Morland Hall, Alton, Hants, for **Fussey's Dora** 10036, fawn, born July 21, 1912, calved March 5, 1920, bred by J. T. White, Roussaillerie, St. Peter Port, Guernsey; *s.* Clairvoyantes Sequel 2279 P.S., R.G.A.S., *d.* Fussey 3688 F.S., R.G.A.S.

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[1] £40 towards these Prizes were given by the English Guernsey Cattle Society.

[2] Champion Prize of £5 given by the English Guernsey Cattle Society for the best Bull in Classes 220-222.

[3] Champion Prize of £5 given by the English Guernsey Cattle Society for the best Cow or Heifer in Classes 223-226.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1773 II. (£5.)—MRS PRATT BARLOW, Lynchmere House, Haslemere, Surrey, for **Blue Bell of Goodnestone 10493**, fawn and white, born April 9, 1914, calved May 8, 1920, bred by H. Fitzwalter Plumptre, Goodnestone Park, Canterbury; *s.* Royal Sequel 2511, *d.* Ashburnham Blue Bell 7529 *by* Charmant of the Gron 1809.

1770 III. (£3.)—MRS. JERVOISE, Herriard Park, Basingstoke, for **Fanny du Foulon 22nd. 10013**, fawn and white, born July 3, 1911, calved May 16, 1920, bred by John Le Page, Hill Farm, St Andrews, Guernsey; *s.* Alderney 2nd 2215 P.S., R.G.A.S., *d.* Fanny du Foulon 13th 5734 P S, R.G A.S.

1765 R. N.—MRS. LIONEL CORBETT, Hockley House, Alresford, Hants, for **Wickham Fancy 9th.**

H.C.—1766.

Class 224.—*Guernsey Cows or Heifers (in-milk), calved in* 1916 *or* 1917. [9 entries.]

1775 I. (£10, & Champion.[1])—H R H. THE DUCHESS OF ALBANY, Claremont, Esher, Surrey, for **Bosistow Golden Heart 11887**, fawn and white, born Feb. 23, 1916, calved June 5, 1920, bred by H Herbert Laity, Bosistow, Porthcurnow, Cornwall: *s.* Tregonning Governor of the Blicqs 2866, *d.* Olive Belle 4813 P.S., R.G A.S

1776 II. (£5.)—H. R H. THE DUCHESS OF ALBANY for **Bosistow Victoria 11890**, fawn and white, born March 20, 1916, calved March 30, 1920, bred by H. Herbert Laity, Bosistow, Porthcurnow, Cornwall; *s.* Tregonning Governor of the Blicqs 2866, *d.* Bosistow Valentine 10516 *by* Godolphin Sambo 2450

1781 III. (£3.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for **Murrell Silvia 12988**, lemon and white, born Feb 14, 1917, calved May 24, 1920; *s.* Lynchmere Lord Roberts 2nd 2794, *d.* Ashburnham Slavey 8823 *by* Noble of La Ruette 2344.

1782 R. N.—G. PERCY SANDAY, Puddington Hall, Neston, Birkenhead, for **Down Landes Beauty 2nd.**

H. C.—1777. C.—1783.

Class 225.—*Guernsey Heifers, calved in* 1918. [7 entries.]

1787 I. (£10.)—MRS. PRATT BARLOW, Lynchmere House, Haslemere, Surrey, for **Lynchmere Blue Bell 13724**, fawn and white, born April 24; *s.* Robert's Boys Sequel 2496, *d* Blue Bell of Goodnestone 10493 *by* Royal Sequel 2511.

1786 II. (£5.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for **Murrell Dainty 13775**, lemon, born May 16; *s.* Murrell Fido 3009, *d.* Donata 7th of Warren Wood 9949 *by* Godolphin Bar Gold 2136.

1788 III. (£3.)—G. PERCY SANDAY, Puddington Hall, Neston, Birkenhead, for **Lynchmere Lottie 2nd 13727**, lemon, born Jan. 30, bred by Mrs. Pratt Barlow, Lynchmere House, Haslemere; *s.* Gay Lad 2nd of Le Briquet 3131, *d.* Lottie of Goodnestone 3rd 10812 *by* Golden Casket 3rd 2586.

1789 R. N.—E. J. WYTHES, Copped Hall, Epping, Essex, for **Lady Blanchette of Lilyvale.**

C.—1784.

Class 226.—*Guernsey Heifers, calved in* 1919. [8 entries.]

1794 I. (£10.)—MRS. JERVOISE, Herriard Park, Basingstoke, for **Lady 2nd of Rocque Balan 14533**, fawn and white, born July 19, bred by H. Hurford, Guernsey: *s.* Valentines Honour of the Passee 3826, *d.* Lady Richmond 2nd of St. Leddards 13876 P.S., R.G.A S *by* D'Arcy 2727 P.S., R G.A.S.

1795 II. (£5.)—MRS. JERVOISE, for **Mulberry 4th of Bel Air 14616**, fawn and white, born Jan 21, bred by the Hon. R. C. Molesworth, Hotel Bel Air, Sark; *s.* My Delight of Park Farm 3753 P.S., R.G.A.S, *d.* Mulberry of Bel Air 9687 P.S., R.G.A.S. *by* Defencer 2152 P.S, R.G.A.S.

1793 III. (£3.)—A. W BAILEY HAWKINS, Stagenhoe Park, Welwyn, Herts., for **Stagenhoe Rose of Gold 4th 14979**, fawn and white, born March 6; *s.* Stagenhoe Governor 3405, *d.* Stagenhoe Rose of Gold 11699.

1791 R. N.—MRS. R. C. BAINBRIDGE, Elfordleigh, Plympton, S. Devon, for **Elfordleigh Patricia.**

H. C.—1797.

Kerries.[2]

N.B.—In the Kerry Classes, the number inserted within brackets after the name of an animal indicates the number of such animal in the Irish Kerry Herd Book. A number without brackets indicates that the animal is registered in the English Kerry Herd Book.

Class 227.—*Kerry Bulls, calved in or before* 1918. [3 entries.]

1799 I. (£10, & R. N. for Champion.[3])—LADY FITZGERALD, Buckland, Faringdon, Berks, for **Buckland Battle**, born Sept. 29, 1918; *s.* Minley Victory 406, *d.* Valencia Kitty 2096 *by* Duv Ratmore 280

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[1] Champion Prize of £5 given by the English Guernsey Cattle Society for the best Cow or Heifer in Classes 223-226.

[2] £25 towards these Prizes were given by the English Kerry and Dexter Cattle Society.

[3] Silver Challenge Cup, value Twenty-five Guineas, given by the English Kerry and Dexter Cattle Society for the best Animal in Classes 227-231.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1801 II. (£5.)—CAPT. NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for **Mangerton Gortmore Drops 2nd** 554, black, born Jan. 24, 1917, bred by T. Waite, Highlands, Redhill; *s.* Kilmona Lord 29th 341, *d.* Mangerton Drops 2065 *by* Shamrock Brian Boroihm 332.

1800 **R. N.**—L. HARRISON & Co., LTD., Coolham, Shipley, Sussex, for **Mangerton Dermot 4th.**

Class 228.—*Kerry Bulls, calved in* 1919. [5 entries.]

1802 **I.** (£10.)—L. HARRISON & CO., LTD., Coolham, Shipley, Surrey, for **Valencia Linksman** 960, born April 24, bred by The Knight of Kerry, Valencia Island, Co. Kerry; *s.* Valencia Chieftain 806, *d.* Valencia Meta (5122) *by* Valencia Lord 1st (782).

1803 II. (£5.)—JOHN W. TOWLER, Wadlands Hall, Farsley, Leeds, for **Dauntless of Carton,** born May 16, bred by the Duke of Leinster, Carton Maynooth, Co. Kildare; *s.* Valencia Harold 903, *d.* Mab of Carton 4220 *by* Prince of Carton 771.

1805 **R. N.**—CAPT. NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for **Hattingley Hero.**
H.C.—1804.

Class 229.—*Kerry Cows (in-milk), calved in or before* 1916. [8 entries.]

1814 **I. (£10, & Champion.[1])**—CAPTAIN NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for **Minley Mistress** 1233 F.S., black, born 1908, calved May 10, 1920.

1816 II. (£5.)—JOHN W. TOWLER, Wadlands Hall, Farsley, Leeds, for **Gort Primrose 8th,** born March 16, 1912, calved April 20, 1920, bred by D. M. Rattray, Gortnaskhey, Ballybunion, Co. Kerry; *s.* Gort Peter 688, *d.* Gort Primrose 3rd (3402) *by* Gort Earl (597).

1807 **R. N.**—L. HARRISON & CO., LTD., Coolham, Shipley, Sussex, for **Coquet Dabchick.**
H. C.—1809, 1811, 1813.

Class 230.—*Kerry Heifers (in-milk), calved in* 1917 *or* 1918. [5 entries.]

1815 **I.** (£10.)—LADY FITZGERALD, Buckland, Faringdon, Berks, for **Buckland Blue Bell,** born April 17, 1918, calved June 2, 1920; *s.* Minley Victory 406, *d.* Valencia Bell 2199.

1819 **II.** (£5.)—CAPT. NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for **Castle Lough Cowslip 4th** 2235, born March 3, 1917, calved June 13, 1920, bred by J. Hilliard, Killarney; *s.* Castle Lough Dermott 377, *d.* Castle Lough Cowslip 3rd (746) *by* Castle Lough Rover 2023.

1817 **R. N.**—JOHN W. TOWLER, Wadlands Hall, Farsley, Leeds for **Vaddy Oona 2nd.**
H. C.—1818, 1813.

Class 231.—*Kerry Heifers (not in-milk), calved in* 1918 *or* 1919. [6 entries.]

1823 **I.** (£10.)—JOHN W. TOWLER, Wadlands Hall, Farsley, Leeds, for **Vaddy Mourne 3rd,** born March 10, 1919, bred by Mrs. E. Robertson, Dogleap, Limavady, Co. Derry; *s.* Vaddy Warre 413, *d.* Vaddy Mourne 2nd 2089 *by* Vaddy Burntollet 308.

1824 **II.** (£5.)—JOHN W. TOWLER, for **Vaddy Mournemore,** born April 11, 1918, bred by Mrs. E. Robertson, Dogleap, Limavady, Co. Derry; *s.* Vaddy Burntollet 2nd 788, *d.* Vaddy Mourne (4080) *by* Gort Sneen 3rd (399).

1825 **R. N.**—CAPTAIN NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for **Hattingley Hope.**
H. C.—1822.

Dexters.[2]

N.B.—In the Dexter Classes, the number inserted within brackets after the name of an animal indicates the number of such animal in the Irish Dexter Herd Book. A number without brackets indicates that the animal is registered in the English Dexter Herd Book.

Class 232.—*Dexter Bulls, calved in or before* 1918. [9 entries.]

1829 **I. (£10, & Champion.[3])**—H. G. JONES, Downford, Mayfield, Sussex, for **Downford Dandy** 655, born in Jan. 1918, bred by R. Tait Robertson, The Hutch, Malahide, Co. Dublin.

1830 **II.** (£5.)—MRS. H. J. NUTT, Hampton House, Hampton-in-Arden, for **Fillongley Forester** 630, born May 20, 1917; *s.* General Manager 523, *d.* Fillongley Fancy 2240.

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[1] Silver Challenge Cup, value Twenty-five Guineas, given by the English Kerry and Dexter Cattle Society for the best Animal in Classes 227-231.

[2] £25 towards these Prizes were given by the English Kerry and Dexter Cattle Society.

[3] Silver Challenge Cup, value Twenty-five Guineas, given by the English Kerry and Dexter Cattle Society for the best Animal in Classes 232-236.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1828 III. (£3.)—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, for **La Mancha Victory** 669, born Jan. 27, 1918, bred by R. Tait Robertson, The Hutch, Malahide, Co. Dublin; *s.* La Mancha Goodluck 566, *d.* Slane Black Sally 2587 *by* Gort Tony 3rd (598).

1832 R. N.—MRS. H. R. PELLY, Lyndsays Farm, Ingatestone, Essex, for **April Fool.**
H. C.—1831. C.—1827.

Class 233.—*Dexter Bulls, calved in* 1919.
[6 entries.]

1840 I. (£10.)—R. TAIT ROBERTSON, The Hutch, Malahide, Co. Dublin, for **La Mancha Masher,** red, born July 12, bred by Joseph O'Brien, Doneycarney, Co. Dublin; *s*, La Mancha Tiny Tim 668, *d.* La Mancha Golden Crest 2187.

1839 II. (£5.)—MRS. H. J. NUTT, Hampton House, Hampton-in-Arden, for **Fillongley Forest Fire,** born August 29; *s.* Fillongley Forester 630; *d* Gloriana 2492 *by* Barrow Orphan 498.

1838 R. N.—ALFRED C. KING, Braishfield Manor, Romsey, Hampshire, for **Braishfield Golden Rule.**
H. C.—1836, 1837.

Class 234.—*Dexter Cow (in-milk), calved in or before* 1916.
[12 entries.]

1849 I. (£10, & R. N. for Champion.[1].)—MRS. H. J. NUTT, Hampton House, Hampton-in-Arden, for **Fillongley Faith,** born Feb. 10, 1916, calved June 13, 1920; *s.* General Manager 523 *d.* Granny 2250 *by* Goodfellow 410.

1847 II. (£5.)—ALFRED C. KING, Braishfield Manor, Romsey, Hampshire, for **La Mancha Madeline,** 2272, born in March, 1913 calved May 17, 1920, breeder unknown.

1845 R. N.—H. G. JONES, Downford, Mayfield, Sussex, for **Downford Ruellia.**
H.C.—1844, 1846, 1848, 1851.

Class 235.—*Dexter Heifers (in-milk), calved in* 1917 *or* 1918.
[7 entries.]

1857 I. (£10.)—THEO. A. STEPHENS, Hookstile House, South Godstone, Surrey, for **Light Heart** 2651, born April 15, 1917, calved March 26, 1920, breeder unknown.

1856 II. (£5.)—THEO. A. STEPHENS, for **Lady Elsie** 2642, red, born March 21, 1917, calved April 4, 1920, breeder unknown.

1855 R. N.—E. P. PEYTON, Woodcote Lodge, Kenilworth, for **Patti 5th.**
H. C.—1853.

Class 236—*Dexter Heifers (not in milk,) calved in* 1918 *or* 1919.
[8 entries.]

1863 I. (£10.)—H. G. JONES Downfield, Mayfield, Sussex, for **Downfield Dittany** 2612, born in June, 1918, breeder unknown.

1866 II. (£5.)—MRS. H. J. NUTT, Hampton House, Hampton-in-Arden, for **Fillongley Fury,** born Dec. 9, 1918; *s.* Fillongley Financier 603, *d.* Fillongley Fiend 2417,

1861 R N.—MRS. PHILIP HUNLOKE, Wingerworth Hall, Chesterfield, for **La Mancha Sweetheart.**
H.C.—1865, 1867. C.—1862.

Shetland Cattle.[2]

Class 237.—*Shetland Cows, in-milk.* [4 entries.]

1870 I. (£10.)—R. W. R. MACKENZIE, Earlshall, Leuchars, Fife, for **Olney of Earlshall,** light dun, born Dec. 25. 1914, calved May 10, 1920; *s.* Tollman of Earlshall 85, *d.* Ophelia of Earlshall 227 *by* Young Victor of Earlshall 29.

1871 II. (£5.)—MRS. R. M. PUNSHON, Ingleby House, Northallerton, for **Winkle.** black and white. born April 5. 1917, calved Jan. 19, 1920; *s.* Jacques 114, *d.* Mona of Ingleby 495.

Class 238.—*Shetland Heifers, calved in* 1918 *or* 1919. [3 entries.]

1872 I. (£10.)—R. W. R. MACKENZIE, Earlshall, Leuchars. Fife, for **Maggie of Earlshall,** light dun, born April 18, 1919; *s.* Bob Johnson. *d.* Melby Mona.

1874 II. (£5.)—JOHN ROBSON, Newton, Bellingham, for dun, born in 1918, bred by Mrs. Anderson, Hillswick, Shetland.

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[1] Silver Challenge Cup, value Twenty-five Guineas, given by the English Kerry and Dexter Cattle Society for the best Animal in Classes 232-236.

[2] Prizes given by a Member of the R.A.S.E.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Dairy Cattle of Shorthorn Type.[1]

Class 239.—*Dairy Cows, in-milk, 3 years old or over.* [12 entries.]

1879 I. (£20.)—GEORGE HARRISON, Gainford Hall, Darlington, for **Townson**, roan, age unknown, calved Oct 28, 1919.
1880 II. (£10.)—J. MOFFAT, Spital, Kendal, for **Daisy**, roan, age unknown, calved June 11, 1920.
1884 III. (£5.)—WALTER WILSON, Kidside Farm, Milnthorpe, for **Daisy**, roan, age unknown calved June 16, 1920.
1885 IV. (£3.)—WALTER WILSON, for **Sweet Rose**, red and white, age unknown, calved June 11, 1920
1881 R. N.—J. MOFFAT for **Fillpail.**
H.C.—1886. C.—1875.

Class 240.—*Dairy Heifers, in-milk, under 3 years old.* [3 entries.]

1889 I. (£10.)—J. F. NELSON & CO., Cockerham Hall, Garstang, Lancs, for **Milkmaid**, roan, born in 1918 calved May 30, 1920
1888 II. (£5.)—JOHN EVENS & SON, Burton, Lincoln, for **Burton Diligent**, red born in Oct., 1917, calved May 28 1920, bred by C. J. C. Hill, Glentworth, Lincoln.
1887 III. (£3.)—BOLCKOW, VAUGHAN & CO., LTD., Westerton Farm, Middlesbrough-on-Tees, for **Westerton Belle**, red, born in 1917, calved June 6, 1920; *s.* Merry Chief 2nd, *d.* Westerton Beauty *by* Mead 106184.

Milk Yield Prizes.

Class 241.—*Dairy Shorthorn Cows or Heifers.* [44 entries.]

1002 I. (£10, & Champion.[2])—J. M. STRICKLAND Bainesse, Catterick, Yorks, for **Keyingham Dairy Maid 5th**, roan, born Jan. 2, 1913, calved June 8, 1920, bred by T. J. Tuton, Keyingham, Hull; *s.* Brandsby Aristocrat 107989, *d.* Keyingham Dairy Maid 4th *by* Brandsby Lord Derwent 9th 101608.
1001 II. (£5.)—C & E. STEPHENSON, LTD., Burton House Farms, Stafford, for **Rosannah 6th** (vol. 58, p. 727), red and little white, born Dec. 10, 1911, calved May 18, 1920, bred by J. H. Large, Crudwell Manor, Malmesbury; *s* King Copper 109069, *d.* Rosannah 2nd *by* Master Walton 86585
1009 III. (£3.)—JOHN A. WILLIS, for **Carleton Queen 7th.** (See Class 135.)
1005 R. N.—THE DUKE OF WESTMINSTER, for **Bare Charm.** (See Class 135.)
H. C.—988, 990, 996, 997, 998, 1003, 1008, 1010, 1013, 1019, 1020, 1024, 1026, 1027, 1029, 1038, 1039, 1044, 1045, 1046, 1049, 1054.

Class 242.—*Non-Pedigree Dairy Shorthorn Cows or Heifers.*

[No entry.]

Class 243.—*Lincolnshire Red Shorthorn Cows or Heifers.* [16 entries.]

1127 I. (£10.)—JOHN EVENS & SON, for **Burton Fillingham.** (See Class 145.)
1117 II. (£5.)—COL. J. GRETTON, M.P., Stapleford Park, Melton Mowbray, for **Kerdiston Phœbe 10th**, born Jan. 26, calved May 31, 1920, bred by G. W. Bartle, Kerdiston, Norwich; *s* Burlton Colt 4th 6658, *d. by* Kirmington Jameson 8th 6959.
1112 III. (£3.)—JOHN EVENS & SON, for **Burton Cherry 3rd.** (See Class 144.)
1122 R. N.—STANLEY BLUNDELL, for **Bendish Marcia 2nd.** (See Class 145.)
H. C.—1120, 1123, 1124, 1125, 1126.

Class 244.—*Devon Cows or Heifers.*[3] [9 entries.]

1252 I. (£10.)—W. G. BUSK, Wraxall Manor, Dorchester, for **Wraxall Fancy A405**, born in 1909, calved May 17 1920, breeder unknown.
1251 II. (£5.)—W. G. BUSK, for **Suffragette 1st.** (See Class 160.)
1255 III. (£3.)—JOHN H. CHICK, for **Wynford Pill.** (See Class 160)
1258 R. N.—R. A. CLARKE & SONS, Manor Farm, Chiselborough, Stoke-under-Ham, Somerset, for **Lady 1st.**
H. C.—1259.

Class 245—*South Devon Cows or Heifers.* [5 entries.]

1281 I. (£10.)—JOHN COAKER, for **Primrose.** (See Class 165.)
1283 II. (£5.)—JAMES ISMAY, Iwerne Minster, Blandford, for **Countess 6th 15380**, born Jan. 1, 1915, calved June 1, 1920, bred by S. S Horton, Lixton, Loddiswell, Devon; *s.* Norman 3510, *d.* Countess 7302.

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[1] Prizes given by the Darlington Local Committee.

[2] Champion Prize of £30, with £5 to the Reserve Number given by a Society interested in the production of milk for the Cows obtaining the highest number of points in the Dairy Shorthorn, Lincolnshire Red Shorthorn, Devon, South Devon, Longhorn, Red Poll and British Friesian Milk Yield Competitions.

[3] Prizes given by the Devon Cattle Breeding Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 246.—*Longhorn Cows or Heifers* [3 entries]

1301 I. (£10.)—W. HANSON SALE, for **Arden Cinderella.** (See Class 170.)

1302 II. (£5.)—W HANSON SALE, for **Grace 15th.** (See Class 170.)

Class 247.—*Red Poll Cows or Heifers.* [10 entries.]

1393 I. (£10.)—CAPT. A. RICHARDSON, Seven Springs, Cheltenham, for **Kettleburgh Rosie 4th A 1 23572**, born April 26, 1912, calved June 3, 1920; bred by W. G. Walne, Kettleburgh Hall; *s.* Free Trader 10029, *d.* Kettleburgh Rosie 4th A 22636 *by* Lionel 9711.

1394 II. (£5.)—CAPT. A. RICHARDSON, for **Stowupland Columbyne 25371**, born July 18, 1915 calved April 9, 1920, bred by G. Carter, Stowupland, Stowmarket; *s.* Herontye Davyson 10431, *d.* Woolverstone 21511 *by* Fruitful 9574

1389 III. (£3.)—THE MARCHIONESS OF GRAHAM, Easton Park, Wickham Market, Suffolk, for **Gressenhall Rosa 25620** born Dec. 21, 1914, calved May 21, 1920, bred by J. E. Hill, Gressenhall, East Dereham; *s.* Unique 10379, *d.* Rose 4th *by* Cedric 6061.

1391 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Goring, Reading, for **Kettleburgh Rosie 2nd.**

H. C.—1390, 1396.

Class 248.—*Ayrshire Cows or Heifers* [4 entries.]

1541 I. (£10, & R. N. for Champion.[2])—WILLIAM GIBSON, Moorside. Farm, Worston, Clitheroe, Lancs., for **Moorside Acacia 32527**, brown, born April 23, 1912, calved May 13, 1920; *s* Willoxton St. John 8053 *d.* Willoxton Jean 2nd 27741 *by* Willoxton Morrison 7154.

1542 II. (£5.)—WILLIAM GIBSON, for **Moorside Atalanta 3rd.** (See Class 206a.)

Class 249.—*British Friesian Cows or Heifers.* [15 entries.]

1588 I. (£10, & R. N. for Champion.[1])—WALTER GRAINGER, Temple Farm, Carnaby, Bridlington, Yorks, for **Eske Violet 17664**, born March 1, 1911, calved May 31, 1920, bred by the Exors. of John Humble, High Eske, Beverley; *s.* Routh Commander 567, *d.* Eske Sunshine 966.

1594 II. (£5.)—W. & R. WALLACE, Knebworth, Herts., for **Dorney Billah 20752**, born Feb. 23, 1915, calved June 6, 1920, bred by G. J. Rumbold, Manor Farm, Dorney, Windsor; *s.* Greenhill Prince 1377, *d.* Dorney Bella 7300 *by* Upton Sandow 805.

1584 III. (£3.)—A. & J. BROWN, Hedges Farm, St. Albans, Herts., for **Hedges Friesland Queen 14998**, born Nov. 13, 1913 calved June 8, 1920; Hedges Champion of Champions 271, *d.* Hedges Pretty Queen 1868 *by* Hedges Prince Lawrence 303.

1608 R. N.—ALBERT WEIGHTMAN, Middle Herrington Dairy Farm, Sunderland, for **Pomona Audrey.**

H. C.—1583, 1585, 1587, 1607.

Class 250.—*Jersey Cows or Heifers.* [24 entries.]

1673 I. (£10, & Champion.[2])—W. M. CAZALET, Fairlawne Tonbridge, for **Fairlawne Hussy** (vol. 30, p. 273), broken colour, born Aug. 8, 1916, calved Feb. 19, 1920; *s.* Sir Toby 12154, *d.* Hussy 13th *by* MacDougal 9333.

1689 II. (£5.)—R. BRUCE WARD, Godinton, Ashford, Kent, for **Ida** (vol. 28, p. 277), whole colour, born March 15, 1914, calved Feb. 4, 1920, bred by Major J. Baldwin, Alvechurch, Worcestershire; *s.* Antidote 10843. *d.* Matilda *by* Marshal MacMahon 9695

1669 III. (£3.)—CAPT. C. B. BALFOUR, C.B., Newton Don Kelso, for **Moona** (vol. 28, p. 310), whole colour, born Feb. 24, 1914, calved March 15, 1920; *s.* Kathleen's Majesty 11019, *d* Moxhata *by* Lily's Prince 10331.

1693 R. N.—DR. HERBERT WATNEY, Buckhold, Pangbourne, Berks., for **Sabinas Goose 2nd**

H. C.—1674, 1683, 1685, 1686, 1691, 1692, 1694, 1695, 1708.

Class 251.—*Guernsey Cows or Heifers.* [10 entries.]

1775 I. (£10.)—H.R.H. THE DUCHESS OF ALBANY, for **Bosistow Golden Heart.** (See Class 224.)

1771 II. (£5.)—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks., for **Donata 7th of Warren Wood 9949**, lemon and white, born Jan. 21, 1913, calved May 14, 1920, bred by the late J. I. Smail, Warren Wood, Hayes, Kent; *s.* Godolphin Bar Gold 2136, *d.* Donnington Eversweet 6113 *by* Donnington Lad 1369

1776 III. (£3.)—H.R.H. THE DUCHESS OF ALBANY, for **Bosistow Victoria.** (See Class 224.)

1766 R. N.—JAMES W. FELL, Stressholme Farm, Darlington, for **Governs Dairymaid 10049**, dark lemon and white, born Jan. 19, 1913, calved Feb. 23 1920, bred by W. Simmons, Governs, Truro; *s.* Albans Pride 2225, *d.* Milkmaid 7777 *by* Tregonning King 1792.

H. C.—1767, 1770, 1783.

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[1] Champion Prize of £30 with £5 to the Reserve Number, given by a Society interested in the production of milk for the Cows obtaining the highest number of points in the Dairy Shorthorn, Lincolnshire Red Shorthorn, Devon, South Devon, Longhorn, Red Poll and British Friesian Milk Yield Competitions.

[2] Champion Prize of £20, with £5 to the Reserve Number, given by a Society interested in the production of milk, for the Cows obtaining the highest number of points in the Ayrshire, Jersey and Guernsey Milk Yield Competitions.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 252.—*Kerry Cows or Heifers.* [7 entries.]

1814 **I.** (£10, & Champion.[1])—CAPT. NELSON ZAMBRA, M.C., for **Minley Mistress.** (See Class 229.)

1813 **II.** (£5.)—CAPT. NELSON ZAMBRA, M.C., Hattingley House, Medstead, Hants, for **Castle Lough Nina** 2109, born March 3, 1915, calved April 4, 1920, bred by J. Hilliard, Killarney; *s* Castle Lough Duke 2nd (766), *d.* Castle Lough Nesta (3866) *by* Castle Lough William (701).

1810 **III.** (£3.)—JOHN W TOWLER for **Gort Primrose 8th.** (See Class 229.)

1807 **R. N.**—L HARRISON & CO. LTD Coolham, Shipley, Sussex, for **Coquet Dabchick.**
H. C.—1809, 1811, 1812.

Class 253.—*Dexter Cows or Heifers.* [8 entries.]

1847 **I.** (£10, & R. N. for Champion.[1])—ALFRED C. KING, for **La Mancha Madeline.** (See Class 234.)

1848 **II.** (£5.)—MRS. H. J. NUTT, Hampton House, Hampden-in-Arden, for **Barrow Bracelet 4th** 2296, born Aug 4, 1914, calved April 9, 1920, bred by H. M Gibbs, Barrow Court, Bristol; s. Barrow Bacchus 419, . Barrow Bracelet 1726.

Butter Tests.

Class 254a.—*Cows exceeding* 900 *lb. live weight.*[2]
[94 entries A and B.]

1673 **I.** (£15, & G. M.[3])—W. M. CAZALET, for **Fairlawne Hussy.** (See Class 250.)
1669 **II.** (£10, & S. M.[3])—CAPT. C B BALFOUR C.B., for **Moona.** (See Class 250.)
1281 **III.** (£5.)—JOHN COAKER, for **Primrose.** (See Class 165.)
1693 (**B. M.**[3])—DR. HERBERT WATNEY, Buckhold, Pangbourne, Berks, for **Sabinas Goose 2nd.**

Certificates of Merit.[4]—1689, 1691, 1692, 1694, 1695, 1708.
H. C.—1009, 1010, 1020, 1048, 1112, 1120, 1123, 1126, 1127 1252, 1301 1541, 1588, 1770

Class 254b.—*Cows not exceeding* 900 *lb. live weight*[2]

1686 **I.** (£15.)—MRS. RUDD, for **Meadow Vale Pride.** (See Class 216.)

1683 **II.** (£10.) MAJOR THE HON. HAROLD PEARSON Cowdray Park Midhurst, Sussex, for **Plymouth Lady** (vol 30 p 351), mulberry, born May 31 1918, calved April 25, 1920, bred by Viscount Cowdray, Cowdray Park; *s* Redskin 11822, *d.* La Villaise Lady *by* Plymouth Lad 9388.

1674 **III.** (£5.)—MRS. EVELYN, for **Dairymaid.** (See Class 216.)
H. C.—1810.

Class 255.—*Dairy Shorthorn Cows or Heifers.*[5] [42 entries.]

1009 **I.** (£10.)—JOHN A. WILLIS for **Carleton Queen 7th.** (See Class 135.)

998 **II.** (£5.)—OLYMPIA AGRICULTURAL CO., LTD., for **Bright Aster.** (See Class 135.)

1010 **III.** (£3.)—CAPT. ARNOLD S WILLS, Thornby Hall Northampton for **Duchess of Cranford 3rd** (vol. 55 p. 1154), red, born Oct 29, 1908, calved June 3, 1920, bred by the late George Taylor, Cranford, Middlesex; *s* Beau Sabreur 74040, *d.* Duchess of Armathwaite 4th *by* Golden Robin 68718.

986 **R. N.**—MAJOR G J. BUXTON, for **Castel Maid.** (See Class 135.)
H. C.—1006, 1024, 1048.

GOATS.[6]

Class 256.—*Male Goats, Anglo-Nubian, entered or eligible for entry in the Anglo-Nubian section of the Herd Book, over 2 years old.* [5 entries.]

1890 **I.** (£3.)—MRS MABEL GRACE, Cranleigh, Beltinge Road, Herne Bay, Kent, for **Ruritania Hawthorne,** born Feb. 24, 1918, bred by Miss Foxford, Silkworth House, Sunderland; *s.* Sedberge Romulus 738 *d.* Ruritania Lavender 886.

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[1] Champion Prize of £10, with £5 to the Reserve Number, given by a Society interested in the production of milk, for the Cows obtaining the highest number of points in the Kerry and Dexter Milk Yield Competitions.

[2] Prizes given by the English Jersey Cattle Society.

[3] Gold Medal, Silver Medal, and Bronze Medal given by the English Jersey Cattle Society for the three Jersey animals obtaining the greatest number of points in the Butter Tests.

[4] Certificates of Merit given by the English Jersey Cattle Society for Jersey Cows, not being Prize Winners, obtaining the following points:—Cows five years old and upwards 35 points; Cows under five years old 30 points.

[5] Prizes given by the Dairy Shorthorn Association.

[6] Towards these Prizes, £13 15s. were given by the Darlington Local Committee and £21 by the British Goat Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

1893 II. (£2.)—MRS REGINALD PEASE, Sledwick, Barnard Castle, for **Edenbreck Marcus** 933, born June 11, 1916, bred by Mrs. Pickard, Edenbreck, Lancaster; *s.* Wigmore Tato 704 *d.* Forest Minnikin 591 *by* Coxhill Noodle 526.

1894 III. (£1.)—A. B. SMITH, Romanby House, Northallerton, for **Townbeam Cigar** 5286, born in 1917, bred by Miss Alexander, Stockwell House, Knaresborough; *s.* Grange Granite 2369, *d.* Daffodil *by* Sedgemere Cardinal 1215.

Class 257.—*Male Goats, any other variety, over 2 years old.* [8 entries.]

1896 I. (£3, & Champion.[1])—MRS. CHETWODE, Levington Manor, Alresford, Hants., for **Grange Granite** 2369, Anglo-Nubian Swiss, born March 13, 1914, bred by M E Mitchell, Grange House Levenshulme Manchester; *s* Wigmore Topary 2040, *d* Hawthorne Granite 2256 *by* Holly Lodge Blue Granite 227.

1902 II. (£2.)—MRS. J. C. STRAKER The Leazes, Hexham, for **Ciceter Hearthstone** 2599, cross bred, born March 25, 1916, bred by Countess Bathurst; *s.* Grange Granite, *d.* Cirencester Fortuna.

1895 III. (£ .)—MISS G. M BALLANTINE-DYKES, Rosemary Hill Chilworth, Surrey, for **Pytchley Merry Tom** 4057, Anglo-Nubian-Swiss, born March 9, 1918, bred by Mrs. Soames, Long Buckby Whart, Rugby; *s.* Performer 2552, *d,* Pytchley Merripen *by* Leaze's Lucky Steyne.

1901 R. N.—MRS. J. C. STRAKER, for **Leazes Harvest.**

Class 258.—*Male Goats, any variety, above 1 year, and not exceeding 2 years old.* [11 entries.]

1912 I. (£3, & R. N. for Champion.[1])—MRS G. SOAMES, Long Buckby Wharf, Rugby, for **Pytchley Caruso** 3529, British Alpine, born Feb 19, 1919; *s.* Champion Proud 2853, *d.* Mayfield Carmen 2539 *by* Cherub.

1904 II. (£2.)—BARONESS BURTON, Dochfour, Inverness, for **Dochfour Arrogance** 3503, Anglo-Nubian-Swiss, born Feb 16, 1919; *s.* Champion Proud 2853, *d.* Rockcrest Mollie 3958 *by* Copthorne Nectarine 1648.

1910 III. (£1.)—MISS BERYL S. P. PARMENTER, Didgemere Hall, Roydon, Essex, for **Didgemere Douglas** 3650, Anglo-Nubian-Swiss, born Jan 30, 1919, bred by Mrs. Browell; *s.* Leaze's Lucky Halton 2575, *d.* Withdean Jutta 2435 *by* Leaze's Luck 1754.

1909 IV. (10*s.*)—MISS BERYL S. P. PARMENTER, for **Prophet of Bashley** 3775, Anglo-Nubian-Swiss, born May 6, 1919, bred by Miss Pope, Bashley Lodge, New Milton, Hants; *s.* Edenstead Pluck 3007, *d* Problem of Bashley 3076 *by* Proud 2853.

1911 R. N.—MISS K. PELLY, Theydon Place, Epping, Essex, for **Theydon Angus.**

Class 259.—*Male Kids, any variety, not exceeding 1 year old.* [13 entries.]

1926 I. (£3.)—E. A WALMISLEY, The Priors Farm, Mattingley Green, Hartley-Wintney, Hants, for **Atherstone Prior,** British Alpine, born Feb. 19, 1920; *s.* Tremedda Sir Galahad, *d.* Prudent of Bashley 3074 *by* Proud 2853.

1918 II. (£2.)—MRS MABEL GRACE, Cranleigh, Beltinge Road, Herne Bay, Kent, for **Herne Bay Black Prince** 1260, Anglo-Nubian, born Feb. 16, 1920; *s.* Ruritania Hawthorne 1059, *d* Brentmoor Bunty 1031 *by* Edenbreck Midas 740.

1916 III. (£1.)—MISS C. CHAMBERLAIN, Westons, Lyndhurst, Hants, for **Wayward of Westons** 7609, Anglo-Nubian-Swiss, born April 9, 1920; *s.* Edenstead Pluck 3007, *d.* Prelude of Bashley 3073 *by* Proud 2853.

1917 IV. (10*s*)—MRS. MABEL GRACE, for **Herne Bay Premier** 1265, Anglo-Nubian, born Feb 29, 1920; *s.* Herne Bay Chancellor 1188, *d.* Nash Magpie 997 *by* Woodlands Marauder,

1923 R. N.—MRS. HARRY POTTON, The Homestead, Rayleigh, Essex, for **Sadberge Seneca.**
H. C.—1925.

Class 260.—*Female Goats, Anglo-Nubian, entered or eligible for entry in the Anglo-Nubian section of the Herd Book, over 2 years old.* [18 entries.]

1939 I. (£3)—MISS K PELLY Theydon Place, Epping, Essex, for **Regius Aganippe** 895, born Jan. 4, 1915, kidded May 6 1920, bred by H. King, The White Cottage, Lenham, Kent; *s.* Wigmore Norman 562, *d.* Forest Bellona 673 *by* Forest Rectus 540.

1932 II. (£2.)—MRS. REGINALD PEASE, Sledwick, Barnard Castle, for **Sadberge Mavis** 817, born March 17 1915, kidded April 7, 1920; *s.* Sadberge Romulus 738, *d.* Sadberge Phalerope 679 *by* Sedgemere Viking 576.

1933 III. (£1.)—MRS. REGINALD PEASE, for **Sadberge Brambling** 924, born May 6, 1916, kidded March 10, 1920, *s.* Sledwick Barnard 813, *d.* Bricket Beryl 122 *by* Bricket Viking 167.

1944 R. N.—MRS. C. L. PICKARD, Middle Brow Top, Quernmore, Lancaster, for **Edenbreck Tansy.**
C.—1936

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[1] Challenge Certificate given by the British Goat Society for the best Male Goat.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 261.—*Female Goats, Swiss or Anglo-Swiss, over 2 years old.* [9 entries.]

1947 I. (£3.)—MISS MARJORIE HENDERSON, The Riding, Hexham, for **Riding Crocus** 367, born April 5, 1917, kidded April 12, 1920; *s.* Sedgemere Paris 2nd 292, *d.* Leazes Cornel 313 *by* Copthorne Billikin 274.

1950 II. (£2.)—MRS. J. C. STRAKER, The Leazes, Hexham, for **Leazes Ally** 389, born Feb. 24, 1918, kidded April 17, 1920; *s.* Brendon Friday 349, *d.* Halton Hecuba 270 *by* Le Castor 200.

1951 III. (£1.)—MRS. J. C. STRAKER, for **Leazes Harmony** 386, born Feb. 23, 1918, kidded April 18, 1920; *s.* Brendon Friday 349, *d.* Leazes Haddon 320 *by* Sedgemere Paris 2nd 292.

1952 R. N.—MRS. STRAKER, for **Leazes Haddon.**
H. C.—1945

Class 262.—*Female Goats, British Alpine, over 2 years old.* [7 entries.]

1957 I. (£3, & Champion.[1])—MRS. G. SOAMES, Long Buckby Wharf, Rugby, for **Pytchley Cinerella** 2768, born Jan. 26, 1917, kidded April 18, 1920; *s.* Performer 2552, *d.* Mayfield Carmen 2538 *by* Cherub.

1955 II. (£2.)—MISS BERYL S. P. PARMENTER, Didgemere Hall, Roydon, Essex, for **Preference** 2779, born March 28, 1917, kidded March 1[illegible], 1919 bred by Miss Pope, Bashley Lodge, New Milton, Hants; *s.* Leazes Lucky Halton 2575, *d.* Prejudice 2500 *by* Champion Leazes Luck 1754.

1959 III. (£1.)—MRS J. C. STRAKER The Leazes, Hexham, for **Leazes Crest** 2595, born Feb. 17, 1916, kidded April 13, 1920; *s.* Leazes Lucky Steyne 1839, *d.* Rock Crest Mawley 3958.

1960 R. N.—MRS. J. C. STRAKER, for **Leazes Lupin.**

Class 263.—*Female Goats, any other variety, over 2 years old.* [30 entries.]

1971 I. (£3, & R. N. for Champion.[1])—MISS MARJORIE HENDERSON, The Riding, Hexham, for **Riding Thistle** 2893, Anglo-Nubian-Toggenburg, born May 9, 1917, kidded May 1, 1920; *s.* Performer 2553, *d.* Wigmore Tulip 2193 *by* Copthorne Torpedo 2336.

1964 II. (£2.)—BARONESS BURTON, Dochfour, Inverness, for **Leazes Pearl** 2516, Anglo-Nubian-Swiss, born May 1, 1915, kidded May 22, 1920, bred by Mrs Straker, The Leazes, Hexham; *s.* Leazes Treasure 2247, *d.* Leazes Lady Fortune 2173 *by* Broxbourne Adviral 1947.

1965 III. (£1.)—MRS J. C. STRAKER, The Leazes, Hexham, for **Leazes Kidstone** 2965, cross bred, born June 26, 1917, kidded Feb. 27, 1920; *s.* Citeter Hearthstone 2599, *d.* Leazes Kiddie 2513 *by* Leazes Lucky Steyne 1839.

1988 IV. (10*s.*)—E. A. WALMISLEY, The Priors Farm, Mattingley Green, Hartley-Wintney, Hants, for **Atherstone Faith** 3338, Anglo-Nubian-Swiss, born May 3, 1918, kidded March 13, 1920; *s.* Grange Granite 2369, *d.* Buckholt Francesca 2658 *by* Woodfalls Francis.

1976 V. (10*s.*)—MRS. REGINALD PEASE, Sledwick, Barnard Castle, for **Sadberge Whooper Swan,** born Feb. 5, 1917, kidded Feb. 25, 1920; *s.* Sledwick Barnard 813, *d.* Leda.

1990 R. N.—E. A. WALMISLEY, for **Towcester Gladys.**
H. C.—1969, 1982, 1986. C.—1963, 1978.

Class 264.—*Goatlings, Anglo-Nubian, entered or eligible for entry in the Anglo-Nubian section of the Herd Book, above* 1 *year and not exceeding* 2 *years old.* [5 entries.]

1993 I. (£3, & B. M.[2])—MISS K. PELLY, Theydon Place, Epping, Essex, for **Theydon Amber,** 1137, born Feb. 22, 1919; *s.* Sadberge Marcus Coriolanus 1003, *d.* Regius Agganippe 895 *by* Wigmore Norman 562.

1994 II. (£2.)—MISS K. PELLY, for **Theydon Marcella** 1139, born Feb. 8, 1919; *s.* Sadberge Marcus Coriolanus 1003, *d.* Theydon Myrtle 909 *by* Sedgemere Georgius 689.

1991 III. (£1.)—WILLIAM SMART HORNE, Nash Court, Westwell, Ashford, Kent, for **Nash Baroness** 1242, born April 7, 1919; *s.* Edenbreck Danus 843, *d.* Nash Bella 1112, *by* Edenbreck Midas 740.

1992 R. N.—MRS. REGINALD PEASE, Sledwick, Barnard Castle, for **Sadberge Kestrel.**
H. C.—1995.

Class 265.—*Goatlings, any other variety, above* 1 *year and not exceeding* 2 *years old.* [11 entries.]

2000 I. (£3, & R. N. for B. M.[2])—THE DUCHESS OF NEWCASTLE, Clumber Park, Worksop, Notts, for **Oadby Chloe** 3744, Anglo-Swiss, born Feb. 17, 1919, bred by Miss C. J. Billson; *s.* Cotswold Remus 2365, *d.* Oadby Myrtle 2657 *by* Leazes Luck 1754.

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[1] Challenge Certificate given by the British Goat Society for the best Female Goat that has borne a Kid.

[2] Bronze Medal given by the British Goat Society for the best Goatling.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

2002 II. (*£2.*)—MISS BERYL S. P PARMENTER, Didgemere Hall, Roydon, Essex, for Didgemere Duchess 3702, Anglo-Nubian-Swiss, born May 5, 1919; *s.* Grange Granite 2369, *d.* Withdean Countess 2855 *by* Leazes Lucky Halton 2575.

2004 III. (*£1.*)—E. A. WALMISLEY, The Priors Farm, Mattingley Green, Hartley-Wintney, Hants., for Threepenny 3876, Anglo-Nubian-Swiss, born April 16, 1919, bred by Lady Arthur Cecil, The Mount, Lymington, Hants.; *s.* Proud 2853, *d.* Beaufront Three Spots 849.

1998 R. N.—MISS MARJORIE HENDERSON, The Riding, Hexham, Northumberland, for Riding Tulip.
H. C.—1997, 2005.

Class 266.—*Female Kids, Anglo-Nubian, entered or eligible for entry in the Anglo-Nubian section of the Herd Book, not exceeding* 1 *year old.* [10 entries.]

2010 I. (*£3, & R. N. for B. M.*[1])—MRS. MABEL GRACE, Cranleigh, Beltinge Road, Herne Bay, for Herne Bay Princess 1263, born Feb. 16, 1920; *s.* Ruritania Hawthorne 1059, *d.* Brentmoor Bunty 1031 *by* Edenbreck Midas 740.

2016 II. (*£2.*)—MISS K. PELLY, Theydon Place, Epping, Essex, for Theydon Crystal 1271, born Feb. 4, 1920; *s.* Sadberge Marcus Coriolanus 1003, *d.* Sledwick Chloe 918 *by* Sadberge Berserker 678.

2009 III. (*£1.*)—MRS. MABEL GRACE, for Herne Bay Patty 1260, born Jan. 30, 1920; *s.* Ruritania Hawthorne 1059, *d.* Nash Eva 856 *by* Scriventon Budget.

2014 R. N.—MRS REGINALD PEASE, Sledwick, Barnard Castle, for Sadberge Rook.
H. C.—2015.

Class 267.—*Female Kids, any other variety, not exceeding* 1 *year old.* [16 entries.]

2029 I. (*£3, & B. M.*[1])—MRS. G. SLOAMES, Long Buckby Wharf, Rugby, for Pytchley Comet 4021, British Alpine, born Jan. 23, 1920; *s.* Pytchley Caruso 3529, *d.* Mayfield Carmen 2538 *by* Cherub.

2020 II. (*£2.*)—N CRADDOCK, Sandhutton, Thirsk, Yorks., for Sandhutton Simonette 4085, Anglo-Nubian-Swiss, born Feb. 24, 1920; *s.* Ockwells Pan 3600, *d.* Ockwells Simplicity 2956 *by* Wild Dragon Fly 503.

2025 III. (*£1.*)—MISS BERYL S. P. PARMENTER, Didgemere Hall, Roydon, Essex, for Didgemere Dulcie, Anglo-Nubian-Swiss, born March 9, 1920; *s.* Prophet of Bashley 3775, *d.* Withdean Countess 2855 *by* Leazes Lucky Halton 2575.

2032 IV. (*10s.*)—A. E. WALMISLEY, The Priors Farm, Mattingley Green, Hartley-Witney, Hants, for Atherstone Dinah, Anglo-Nubian-Swiss, born Feb. 28, 1920; *s.* Puck of Bashley 3605, *d.* Halstead Enid 3274 *by* Zoyland Benson 2873.

2026 R. N.—CYRIL R. PAYNE, Pegglesworth Hall, Andoversford, Glos., for Pytchley Skittles.

Milk Yield Prizes.

Class 268.—*Milk Yield Prizes, open to Goats, the property of Cottagers within a radius of* 20 *miles of the Darlington Town Hall, who pay a rental of £*10 *and under.* [No entry.]

Class 269.—*Goats that have previously won a 1st, 2nd or 3rd Prize in any Milking Competition.* [7 entries.]

1969 I. (*£3.*)—SAM FOSTON, 21, St. Wilfred's Road, Hexham, for Blossom, Toggenburg, born March 28th, 1917, kidded April 5th, 1920, bred by W. Hind, How Mill, Cumberland.

1929 II. (*£2.*)—MRS. MABEL GRACE, Cranleigh, Beltinge Road, Herne Bay, Kent, for Brentmoor Bunty 1031, born March 26, 1917, kidded Feb. 16, 1920, bred by W. S. Horne, Nash Court, Westwell, near Ashford; *s.* Edenbreck Midas 740, *d.* Nash Magpie 997 *by* Woodlands Marauder 742.

1964 III. (*£1.*)—BARONESS BURTON, for Leazes Pearl. See Class 263.

Class 270.—*Goats, not eligible for Class* 269. [33 entries.]

1982 I. (*£3, & Champion.*[2])—MRS. HARRY POTTEN, The Homestead, Rayleigh, Essex, for Honeymead Dainty 2388, Anglo-Nubian-Swiss, born March 31, 1913 kidded April 12, 1920, bred by George Walker, Honeymead, Wendover, Bucks; *s.* Klito 272, *d.* Videx 2071, *by* Copthorne Victor 1594.

1985 II. (*£2, & R. N. for Champion.*[2])—MRS. J. C. STRAKER, The Leazes, Hexham, for Leazes Kidstone. (See Class 263.)

1952 III. (*£1.*)—MRS. J. C. STRAKER, for Leazes Haddon 320, born April 4, 1915, kidded March 24, 1920; *s.* Sedgemere Paris 2nd 292, *d.* Halton Hagar 248 *by* Romura 195.

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[1] Bronze Medal given by the British Goat Society for the best Kid.

[2] The "Dewar" Twenty-Guinea Challenge Trophy given by the British Goat Society for the Goat entered in either the General or Toggenburg section of the Herd Book winning the highest number of points in the Milking Classes.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

SHEEP.

Oxford Downs.

Class 271.—*Oxford Down Shearling Rams.* [14 entries.]

2041 I. (£10), & 2042 III. (£3.)—HUGH W. STILGOE, The Grounds, Adderbury, Banbury.
2036 II. (£5.)—FREDERICK PENSON, Taston, Charlbury Oxon.
2033 R. N.—CAPTAIN R. B. BRASSEY, Heythrop Park, Chipping Norton.
H.C.—2037, 2040. C.—2043, 2045.

Class 272.—*Oxford Down Ram Lambs.*[1] [9 entries.]

2047 I. (£10), & 2048 R. N.—HENRY AKERS & CO., Moat House, Black Bourton, Clanfield, Oxon.
2053 II. (£5.)—FREDERICK PENSON, Taston, Charlbury, Oxon.
2052 III. (£3.) THE DUKE OF MARLBOROUGH, K.G., Blenheim Park, Woodstock.
H.C.—2051 2055 C.—2049, 2054.

Class 273.—*Three Oxford Down Ram Lambs.* [10 entries.]

2061 I. (£10.) & 2062 III. (£3.)—THE DUKE OF MARLBOROUGH, K.G., Blenheim Park, Woodstock.
2056 II. (£5.)—HENRY AKERS & CO., Moat House, Black Bourton, Clanfield, Oxon.
2064 R. N.—SYDNEY READING, Langford, Lechlade, Glos.
H.C.—2065. C.—2057.

Class 274.—*Three Oxford Down Shearling Ewes.* [7 entries.]

2068 I. (£10.)—FREDERICK PENSON, Taston, Charlbury, Oxon.
2066 II. (£5.)—CAPTAIN R. B. BRASSEY, Heythrop Park, Chipping Norton, Oxon.
2070 III. (£3.)—HUGH W STILGOE, The Grounds, Adderbury, Banbury.
2072 R. N.—WILLIAM TREVETHAN, Hill House Farm, Northleach, Glos.
H. C.—2069, 2071.

Class 275.—*Three Oxford Down Ewe Lambs.* [9 entries.]

2077 I. (£10.)—THE DUKE OF MARLBOROUGH, K.G., Blenheim Park, Woodstock.
2073 II. (£5.)—HENRY AKERS & CO., Moat House, Black Bourton, Clanfield, Oxon.
2080 III. (£3.) & 2079 R. N.—SYDNEY READING, Langford, Lechlade, Glos.
H. C.—2081. C.—2074.

Shropshires.[2]

Class 276.—*Shropshire Two-Shear Rams.* [7 entries.]

2087 I. (£10.)—EDWARD CRAIG TANNER Eyton-on-Severn, Shrewsbury, for **Eyton Rex.**
2082 II. (£5.)—AMBROSE SALISBURY BERRY, Shenstone Hall, Lichfield, Staffs.
2084 III. (£3.)—MRS. W. F. INGE, Thorpe, Tamworth, Staffs.
2088 R. N.—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.
C.—2085, 2086.

Class 277.—*Shropshire Shearling Rams.* [18 entries.]

2093 I. (£10.)—RICHARD ELWYN BIRCH, Maes Elwy, St. Asaph.
2104 II. (£5.)—EDWARD CRAIG TANNER, Eyton-on-Severn, Shrewsbury.
2100 III. (£3.)—K. W. MILNES, The Field, Hereford.
2091 IV. (£2.)—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury.
2105 R. N.—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.
H. C.—2090, 2092, 2102. C.—2094, 2099.

Class 278.—*Three Shropshire Shearling Rams.* [8 entries.]

2114 I. (£15.)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.
2109 II. (£10.)—RICHARD ELWYN BIRCH, Maes Elwy, St. Asaph.
2108 III. (£5.)—F. & F B. BIBBY, Hardwicke Grange, Shrewsbury.
2111 R.N.—K. W. MILNES, The Field, Hereford.
H. C.—2112. C.—2107 2110.

Class 279.—*Shropshire Ram Lambs.* [9 entries.]

2123 I. (£10.)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.
2122 II. (£5.)—EDWARD CRAIG TANNER, Eyton-on-Severn, Shrewsbury.
2117 (III. (£3.)—RICHARD ELWYN BIRCH, Maes Elwy, St. Asaph.
2120 R. N.—MRS. W. F. INGE, Thorpe, Tamworth, Staffs.
H.C.—2119. C.—2121.

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[1] Prizes given by the Oxford Down Sheep Breeders' Association.

[2] £60 towards these Prizes were given by the Shropshire Sheep Breeders' Association.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 280.—*Three Shropshire Ram Lambs.* [7 entries.]

2130 **I.** (**£10.**)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.
2129 **II.** (**£5.**)—EDWARD CRAIG TANNER, Eyton-on-Severn, Shrewsbury.
2128 **III.** (**£3.**)—K. W. MILNES, The Field, Hereford.
2127 **R. N.**—MRS. W. F. INGE, Thorpe, Tamworth, Staffs.

Class 281.—*Three Shropshire Shearling Ewes.* [7 entries.]

2137 **I.** (**£10.**)—EDWARD CRAIG TANNER, Eyton-on-Severn, Shrewsbury.
2134 **II.** (**£5.**)—MRS. W F. INGE, Thorpe, Tamworth, Staffs.
2131 **III.** (**£3.**)—F. & F. B. BIBBY, Hardwicke Grange, Shrewsbury.
2133 **R. N.**—COLONEL HENRY HOWARD, C.B., Wygfair, St. Asaph.
C.—2135.

Class 282.—*Three Shropshire Ewe Lambs.* [8 entries.]

2139 **I.** (**£ 0)**—RICHARD ELWYN BIRCH, Maes Elwy, St. Asaph.
2144 **II.** (**£5.**)—EDWARD CRAIG TANNER, Eyton-on-Severn, Shrewsbury.
2143 **III.** (**£3.**)—K. W. MILNES, The Field, Hereford.
2142 **R. N.**—MRS. W. F INGE, Thorpe, Tamworth, Staffs.
C.—2138.

Southdowns.

Class 283.—*Southdown Two-Shear Rams.*[1] [11 entries.]

2151 **I.** (**£10, & R. N. for Champion.**[2])—R. S. HICKS, Wilbraham Temple, Cambs.
2147 **II.** (**£5.**)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.
2149 **III.** (**£3.**)—LADY FITZGERALD, Buckland, Faringdon, Berks.
2152 **R. N.**—LADY LUDLOW, Luton Hoo, Beds
H. C.—2155. **C.**—2146, 2153.

Class 284.—*Southdown Shearling Rams.* [14 entries.]

2163 **I.** (**£10, & Champion.**[2])—LADY FITZGERALD, Buckland, Faringdon, Berks.
2160 **II.** (**£5.**)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.
2157 **III.** (**£3.**)—HIS MAJESTY THE KING Sandringham.
2165 **R. N.**—REGINALD S. HICKS, Wilbraham Temple, Cambs.
H. C.—2167. **C.**—2158, 2170.

Class 285.—*Three Southdown Shearling Rams.*[1] [7 entries.]

2175 **I.** (**£10.**)—REGINALD S. HICKS, Wilbraham Temple, Cambs.
2174 **II.** (**£5.**)—LADY FITZGERALD, Buckland, Faringdon, Berks.
2172 **III.** (**£3.**)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.
2177 **R. N.**—THE DUKE OF RICHMOND AND GORDON, K.G., Goodwood, Chichester.
H. C.—2176. **C.**—2171.

Class 286.—*Three Southdown Ram Lambs.* [12 entries.]

2182 **I.** (**£10.**)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex.
2183 **II.** (**£5.**)—LADY FITZGERALD Buckland, Faringdon, Berks.
2180 **III.** (**£3.**)—SIR JEREMIAH COLMAN, BT, Gatton Park, Surrey.
2181 **IV.** (**£2.**)—THE EARL OF DERBY, K.G., Hatchfield Farm, Newmarket.
2188 **R. N.**—THE DUKE OF RICHMOND AND GORDON, K.G., Goodwood, Chichester.
H.C.—2187. **C.**—2186.

Class 287.—*Three Southdown Shearling Ewes.* [8 entries.]

2195 **I.** (**£10, & Champion.**[3])—R. S. HICKS, Wilbraham Temple, Cambs.
2192 **II.** (**£5, & R. N. for Champion.**[3])—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.
2196 **III.** (**£3.**)—LADY LUDLOW, Luton Hoo, Beds.
2193 **R. N.**—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex.
H. C.—2197. **C.**—2194.

Class 288.—*Three Southdown Ewe Lambs.* [12 entries.]

2203 **I.** (**£10.**)—LADY FITZGERALD Buckland, Faringdon, Berks.
2200 **II.** (**£5.**)—SIR JEREMIAH COLMAN, BT., Gatton Park, Surrey.
2202 **III.** (**£3.**)—E. C. FAIRWEATHER, Avisford Park, Arundel, Sussex.
2201 **IV.** (**£2.**)—THE EARL OF DERBY, K.G., Hatchfield Farm, Newmarket.
2207 **R. N.**—BERNARD OPPENHEIMER, Sefton Park, Stoke Poges, Bucks.
H. C.—2208. **C.**—2206.

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[1] Prizes given by the Southdown Sheep Society.

[2] Champion Gold Medal, value £10 10*s.* (or £10 10*s.* in cash) given by the Southdown Sheep Society for the best Ram in Classes 283 and 284.

[3] Silver Medal (or £1 in cash) given by the Southdown Sheep Society for the best Pen of Ewes or Ewe Lambs in Classes 287 and 288.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Hampshire Downs.

Class 289.—*Hampshire Down Two-Shear Rams.*[1] [4 entries.]

2211 I. (£10), & 2212 R. N.—GEORGE PHILIPPI, Crawley Court, Winchester, for Crawley No. 75 & Crawley No. 72.

2210 II. (£5.)—MRS. JERVOISE, Herriard Park, Basingstoke.

C.—2213.

Class 290.—*Hampshire Down Shearling Rams.* [12 entries.]

2215 I. (£10), & 2216 II. (£5.)—MRS. JERVOISE, Herriard Park, Basingstoke

2214 III. (£3.)—THE HON. LADY E. M. HULSE, Breamore House, Breamore, Hants.

2218 R. N.—PENDLEY STOCK FARMS, Pendley, Tring, Herts.

H.C.—2222, 2223. C.—2217, 2219.

Class 291.—*Hampshire Down Ram Lambs.*[1] [12 entries.]

2236 I. (£10, & R. N. for Champion.[2])—V. T. THOMPSON, Norton Manor, Sutton Scotney

2226 II. (£5.)—THE HON. LADY E. M. HULSE, Breamore House, Breamore, Hants.

2234 III. (£4.)—GEORGE PHILIPPI, Crawley Court, Winchester.

2229 IV. (£2.)—MRS JERVOISE, Herriard Park, Basingstoke.

2231 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Goring, Reading.

H. C.—2232, 2235, 2237. C.—2230, 2233.

Class 292—*Three Hampshire Down Ram Lambs.* [10 entries.]

2240 I. (£10, & Champion.[2])—MRS. JERVOISE, Herriard Park, Basingstoke.

2246 II. (£5.)—V. T. THOMPSON, Norton Manor, Sutton Scotney, Hants.

2238 III. (£3.)—THE HON. LADY E. M. HULSE, Breamore House, Breamore, Hants.

2244 R. N.—PENDLEY STOCK FARMS, Pendley, Tring, Herts.

H. C.—2242, 2245 C.—2241, 2247.

Class 293.—*Three Hampshire Down Shearling Ewes.* [5 entries.]

2250 I. (£10.)—PENDLEY STOCK FARMS, Pendley, Tring, Herts.

2252 II. (£5.)—V. T. THOMPSON, Norton Manor, Sutton Scotney, Hants.

2248 III. (£3.)—MRS. JERVOISE, Herriard Park, Basingstoke.

Class 294.—*Three Hampshire Down Ewe Lambs.* [10 entries.]

2261 I. (£10.)—V. T. THOMPSON, Norton Manor, Sutton Scotney, Hants.

2255 II. (£5.)—MRS. JERVOISE, Herriard Park, Basingstoke.

2259 III. (£3.)—PENDLEY STOCK FARMS, Pendley, Tring, Herts.

2260 R. N.—GEORGE PHILIPPI, Crawley Court, Winchester.

H.C.—2253. C.—2256, 2262.

Suffolks.

Class 295.—*Suffolk Two-Shear Rams.*[3] [4 entries.]

2265 I. (£10), & 2266 III. (£5.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.

2263 II. (£5.)—CHIVERS & SONS, LTD., Histon, Cambs., for Histon Playford.

Class 296.—*Suffolk Shearling Rams.* [6 entries.]

2271 I. (£10), & 2272 II. (£5.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.

2270 III. (£3).—S. R. SHERWOOD, Playford, Ipswich, for Playford Senator.

2267 R. N.—R. L. BARCLAY, Higham, Bury St. Edmunds, for Higham Victor 1st.

Class 297.—*Suffolk Ram Lambs.* [14 entries.]

2281 I. (£10[1]), & 2282 IV. (£2.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.

2280 II. (£5.[1])—G. BERTRAM SHIELDS, Dolphingstone, Tranent, East Lothian.

2279 III. (£3.[1])—S. R. SHERWOOD, Playford, Ipswich.

2274 R. N.—THE RT. HON. SIR ERNEST CASSEL, Moulton Paddocks, Newmarket.

H. C.—2278. C.—2285.

Class 298.—*Three Suffolk Ram Lambs.* [10 entries.]

2295 I. (£10.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.

2293 II. (£5.)—S. R. SHERWOOD, Playford, Ipswich.

2287 III. (£3.)—ROBERT L. BARCLAY, Higham, Bury St. Edmunds.

2291 IV. (£2.)—WILLIAM F. PAUL, Kirton Lodge, Ipswich.

2288 R. N.—RT. HON. SIR ERNEST CASSEL, Moulton Paddocks, Newmarket.

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[1] Prizes given by the Hampshire Down Sheep Breeders' Association.

[2] Champion Prize of £10 given by the Hampshire Down Sheep Breeders' Association for the best Ram Lamb, Pen of Ram Lambs or Ewe Lambs in Classes 291, 292 and 294.

[3] Prizes given by the Suffolk Sheep Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibtior."]

Class 299.—*Three Suffolk Shearling Ewes.* [4 entries.]

2297 I. (£10.)—CHIVERS & SONS, LTD., Histon, Cambs.
2299 II. (£5.)—WILLIAM F. PAUL, Kirton Lodge, Ipswich.
2298 III. (£3.)—A. PRESTON JONES, Mickleover House, Derby.

Class 300.—*Three Suffolk Ewe Lambs.* [11 entries.]

2309 I. (£10.)—HERBERT E. SMITH, The Grange, Walton, Ipswich.
2302 II. (£5.)—RT. HON. SIR ERNEST CASSEL, Moulton Paddocks, Newmarket.
2307 III. (£3.)—S. R. SHERWOOD, Playford Ipswich.
2306 IV. (£2.)—WILLIAM F. PAUL, Kirton Lodge, Ipswich.
2303 R. N.—CHIVERS & SONS, LTD., Histon, Cambs.
H. C.—2301. C.—2308.

Dorset Horns.[1]

Class 301.—*Dorset Horn Shearling Rams, born on or after November* 1, 1918. [3 entries.]

2313 I. (£10), & 2314 II. (£5.)—FRANK J. MERSON & SON, Farringdon, North Petherton, Bridgwater.

Class 302.—*Three Dorset Horn Ram Lambs, born on or after November* 1, 1919. [3 entries.]

2316 I. (£10, & Champion.[2])—G. A. & R. A. KINGSWELL, Wellow Farm, Yarmouth, Isle of Wight.
2315 II. (£5.)—F. P. BROWN, Kingston Farm, Chillerton, Isle of Wight.
2317 III. (£3.)—FRANK J. MERSON & SON, Farringdon, North Petherton, Bridgwater.

Class 303.—*Three Dorset Horn Shearling Ewes, born on or after November* 1, 1918. [2 entries.]

2318 I. (£10.)—F. P. BROWN, Kingston Farm, Chillerton, Isle of Wight.
2319 II. (£5.)—FRANK J. MERSON & SON, Farringdon, North Petherton, Bridgwater.

Class 304.—*Three Dorset Horn Ewe Lambs, born on or after November* 1, 1919. [3 entries.]

2321 I. (£10, & R. N. for Champion.[2])—G. A. & R. A. KINGSWELL, Wellow Farm, Yarmouth, Isle of Wight.
2320 II. (£5.)—F. P. BROWN, Kingston Farm, Chillerton, Isle of Wight.
2322 III. (£3.)—FRANK J. MERSON & SON, Farringdon, North Petherton, Bridgwater.

Ryelands.[3]

Class 305.—*Ryeland Rams, Two-Shear and upwards.* [7 entries.]

2323 I. (£10.)—FRIEND & RENWICK, The Weald, Sevenoaks, for **Brasted Matchless.**
2328 II. (£5.)—DAVID J. THOMAS, Talachddu Brecon, for **Clytha Instep.**
2327 III. (£3.)—JOHN Q. ROWETT, Ely Place, Frant, Tunbridge Wells, for **Talachddu Model.**
2326 R. N.—WM. PARKIN-MOORE, Whitehall, Mealsgate, Cumberland, for **Hustler.**
H. C.—2325. C.—2324.

Class 306.—*Ryeland Shearling Rams.* [17 entries.]

2335 I. (£10.)—F. T. GOUGH, Lugwardine, Hereford, for **Lugwardine Sparklet.**
2343 II. (£5.)—JOHN Q. ROWETT, Ely Place, Frant, Tunbridge Wells, for **Brasted Oahetts.**
2337 III. (£3.)—C. H. HOBBS, Oldport, Oswestry, for **Oldport Merrymaker.**
2345 R. N.—DAVID J. THOMAS, Talachddu, Brecon, for **Talachddu Client.**
H. C.—2339. C.—2334.

Class 307.—*Three Ryeland Ram Lambs.* [8 entries.]

2348 I. (£10.)—F. T. GOUGH, Lugwardine, Hereford.
2353 II. (£5), & 2354 R.N.—J. R. NORMAN WATERS, Fawke Farm, Sevenoaks, Kent.
2347 III. (£3.)—FRIEND & RENWICK The Weald, Sevenoaks, Kent.
H. C.—2350. C.—2351.

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[1] £18 towards these Prizes were given by the Dorset Horn Sheep Breeders' Association.

[2] Champion Silver Medal given by the Dorset Horn Sheep Breeders' Association for the best exhibit of Dorset Horn Sheep in Classes 301 to 304.

[3] £27 towards these Prizes were given by the Ryeland Flock Book Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 308.—*Three Ryeland Shearling Ewes.* [9 entries.]

2357 **I.** (£10.)—F. T. GOUGH, Lugwardine, Hereford.
2355 **II.** (£5), & 2356 **III.** (£3.)—FRIEND AND RENWICK, The Weald, Sevenoaks, Kent.
2362 **R. N.**—JOHN Q. ROWETT, Ely Place, Frant, Tunbridge Wells.
H. C.—2360. **C.**—2358.

Class 309.—*Three Ryeland Ewe Lambs.* [5 entries.]

2364 **I.** (£10.)—FRIEND & RENWICK, The Weald, Sevenoaks, Kent.
2368 **II.** (£5.)—JOHN Q. ROWETT, Ely Place, Frant, Tunbridge Wells.
2365 **III.** (£3.)—F. T. GOUGH, Lugwardine, Hereford.

Kerry Hill (Wales).[1]

Class 310.—*Kerry Hill (Wales) Rams, Two-Shear and upwards.* [7 entries.]

2369 **I.** (£10.)—WILLIAM ALDERSON, Glanmiheli, Kerry, Mont., for **Pentrenant Magnet.**
2374 **II.** (£5), & 2373 **R. N.**—THE EARL OF POWIS, Powis Castle, Welshpool, for **Pentrenant Napier.**
2375 **III.** (£3.)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.

Class 311.—*Kerry Hill (Wales) Shearling Rams.* [7 entries.]

2382 **I.** (£10), & 2381 **III.** (£3.)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.
2376 **II.** (£5.)—WILLIAM ALDERSON, Glanmiheli, Kerry, Mont.
2377 **R. N.**—MAJOR DAVID DAVIES, M.P., Broneirion, Llandinam, for **Dinam's Nonsuch.**

Class 312.—*Kerry Hill (Wales) Ram Lambs.* [6 entries.]

2388 **I.** (£10.)—THE EARL OF POWIS, Powis Castle, Welshpool.

Class 313.—*Three Kerry Hill (Wales) Shearling Ewes.* [6 entries.]

2394 **I.** (£10.)—THE DUKE OF WESTMINSTER, Eaton Hall, Chester.
2393 **II.** (£5.)—THE EARL OF POWIS, Powis Castle, Welshpool.
2389 **III.** (£3.)—MAJOR DAVID DAVIES, M.P., Broneirion, Llandinam, Mont.

Lincolns.[2]

Class 314.—*Lincoln Two-Shear Rams.* [13 entries.]

2404 **I.** (£10, & **R. N. for Champion.**[3])—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber, for **Horkstow Manor Pointon.**
2395 **II.** (£5.)—JOSEPH BROCKLEBANK, Carlton le Moorland, Newark, for **Firsby Advance.**
2399 **III.** (£3.)—J. H. DEAN & SONS, Heath House, Nocton, Lincoln, for **Kirmington Best.**
2398 **R. N.**—J. H. DEAN & SONS, for **Beaufoe Heath.**
H. C.—2406. **C.**—2405.

Class 315.—*Lincoln Shearling Rams.* [19 entries.]

2421 **I.** (£10 & **Champion.**[3])—CHARLES E. HOWARD, Nocton Rise, Lincoln.
2423 **II.** (£5.)—CLIFFORD NICHOLSON, Horkstow Manor, Barton on-Humber.
2413 **III.** (£3), & 2412 **IV.** (£2.)—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.
2425 **R. N.**—W. H. WATSON, Temple Bruer, Lincoln.
H. C.—2415. **C.**—2409, 2410.

Class 316.—*Five Lincoln Shearling Rams.* [12 entries.]

2431 **I.** (£15.)—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.
2435 **II.** (£10.)—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.
2438 **III.** (£5.)—W. H. WATSON, Temple Bruer, Lincoln.
2433 **IV.** (£2.)—ANCELL B. HOLT, Home Farm, Sturton, Brigg, Lincs.
2428 **R. N.**—JOSEPH BROCKLEBANK, Carlton-le-Moorland, Newark.

Class 317.—*Three Lincoln Ram Lambs.* [9 entries.]

2447 **I.** (£10.)—W. H. WATSON, Temple Bruer, Lincoln.
2444 **II.** (£5.)—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.
2441 **III.** (£3.)—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.
2439 **R. N.**—THOMAS CAMPION, Carr House, East Heslerton, York.
H. C.—2443. **C.**—2440.

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[1] £20 towards these Prizes were given by the Kerry Hill (Wales) Flock Book Society.

[2] £48 towards these Prizes were given by the Lincoln Long-Wool Sheep Breeders' Association.

[3] Champion Prize of £5 given by the Lincoln Long-Wool Sheep Breeders' Association for the best Ram in Classes 314 and 315.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 318.—*Three Lincoln Shearling Ewes.* [9 entries.]

2452 I. (£10.)—CHARLES E. HOWARD, Nocton Rise, Lincoln
2448 II. (£5), & 2449 R. N.—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.
2455 III. (£3.)—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.
H. C.—2450 C.—2456.

Class 319.—*Three Lincoln Ewe Lambs.* [7 entries.]

2463 I. (£10.)—W. H. WATSON, Temple Bruer, Lincoln.
2459 II. (£5), & 2458 III. (£3.)—J. H. DEAN & SONS, Heath House, Nocton, Lincoln.
2460 R. N.—CLIFFORD NICHOLSON, Horkstow Manor, Barton-on-Humber.
H. C.—2457.

Leicesters.[1]

Class 320.—*Leicester Shearling Rams, Two Shear and upwards.* [4 entries.]

2464 I. (£10, & R. N. for Champion[2]), & 2465 III. (£3.)—GEORGE HARRISON, Gainford Hall, Darlington.
2467 II. (£5.)—CHARLES C. WRAY, East Flotmanby, Filey, for King's Champion.

Class 321.—*Leicester Shearling Rams.* [7 entries.]

2472 I. (£10, & Champion[2]), 2473 II. (£5), & 2474 R. N.—EXORS OF E. F. JORDAN, Eastburn, Driffield.
2468 III. (£3.)—GEORGE HARRISON, Gainford Hall, Darlington.

Class 322.—*Three Leicester Ram Lambs.* [2 entries.]

2476 I. (£10.)—GEORGE HARRISON, Gainford Hall, Darlington
2475 II. (£5.)—ROBERT N. GOODALL, West Flotmanby, Filey, Yorks.

Class 323.—*Three Leicester Shearling Ewes.* [3 entries.]

2478 I. (£10), & 2479 II. (£5.)—EXORS. OF E. F. JORDAN, Eastburn, Driffield.
2477 III. (£3.)—ROBERT N. GOODALL, West Flotmanby, Filey, Yorks.

Class 324.—*Three Leicester Ewe Lambs.* [2 entries.]

2480 I. (£10), & 2481 II. (£5.)—GEORGE HARRISON, Gainford Hall, Darlington.

Border Leicesters.[3]

Class 325.—*Border Leicester Rams, Two-Shear and upwards.* [6 entries.]

2486 I. (£10.)—R. G. MURRAY & SON, Spittal, Biggar, for Spittal One Hundred.
2487 II. (£5.)—WILLIAM R. ROSS, Milton of Culloden, Inverness, for Lord Richmond.
2484 III. (£3.)—W. J. GLAHOME, Little Houghton, Lesbury, for St. Ronan.
H. C.—2483. C.—2482.

Class 326.—*Border Leicester Shearling Rams.* [11 entries.]

2497 I. (£10 & Champion.[4]), & 2496 III. (£3.)—R. G. MURRAY & SON, Spittal, Biggar.
2498 II. (£5.)—WILLIAM R. ROSS, Milton of Culloden, Inverness.
2488 R. N.—THE RT. HON. A. J. BALFOUR, M.P., Whittingehame, Prestonkirk.
H. C.—2492. C.—2491.

Class 327.—*Border Leicester Ewes, Two-Shear and upwards (with their lamb at foot).* [3 entries.]

2501 I. (£10, & R. N. for Champion.[4])—WILLIAM R. ROSS, Milton of Culloden, Inverness.
2500 II. (£5.)—R. G. MURRAY & SON, Spittal, Biggar.
2499 III. (£3.)—THE RT. HON. A. J. BALFOUR, M.P., Whittingehame, Prestonkirk.

Class 328.—*Border Leicester Shearling Ewes.* [7 entries.]

2508 I. (£10.)—WILLIAM R. ROSS, Milton of Culloden, Inverness.
2507 II. (£5.)—R. G. MURRAY & SON, Spittal, Biggar.
2502 III. (£3.)—THE RIGHT HON. A. J. BALFOUR, M.P., Whittingehame, Prestonkirk.
2505 R. N.—W. J. GLAHOME, Little Houghton, Lesbury, Northumberland.

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[1] £28 towards these Prizes were given by the Leicester Sheep Breeders' Association.

[2] Champion Silver Medal given by the Leicester Sheep Breeders' Association for the best Ram in Classes 320 and 321.

[3] £20 towards these Prizes were given by the Society of Border Leicester Sheep Breeders.

[4] Perpetual Challenge Cup given by the Society of Border Leicester Sheep Breeders for the best Ram or Ewe in Classes 325-328. A Gold Medal will be given by the Society of Border Leicester Sheep Breeders to the winner of the Challenge Cup.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Wensleydales.[1]

Class 329.—*Wensleydale Rams, Two-Shear and upwards.* [9 entries.]

2510 I. (£10.)—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale, for Ripon Blue.
2516 II. (£5.)—LORD HAWKE Wighill Park, Tadcaster, for Wighill Wonder.
2515 III. (£3.)—JOHN HARGRAVE Wath, Ripon, for Admiral Blue.
2513 R. N.—WILLIAM DINSDALE Low Bolton, Redmire Yorks, for Captain Gibson.
H. C.—2517.

Class 330.—*Wensleydale Shearling Rams.* [8 entries.]

2521 I. (£10, & Champion.[2])—JOHN WILLIAM GREENSIT, Holme-on-Swale, Thirsk.
2519 II. (£5.)—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale.
2525 III. (£3.)—JOHN A. WILLIS, Manor House, Carperby, Yorks.
2520 R. N.—RICHARD CHESTER Low Moor Farm, Ripon.
H. C.—2524. C.—2518

Class 331.—*Three Wensleydale Shearling Rams.* [8 entries.]

2530 I. (£10) & 2529 III. (£3.)—JOHN WILLIAM GREENSIT, Holme-on-Swale, Thirsk.
2526 II. (£5.)—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale.
2532 R. N.—JOHN A. WILLIS Manor House, Carperby, Yorks.
H. C.—2527. C.—2528.

Class 332.—*Three Wensleydale Shearling Ewes.* [7 entries.]

2536 I. (£10, & R. N. for Champion.[2])—WILLIAM DINSDALE Low Bolton, Redmire.
2537 II. (£5.)—JOHN WILLIAM GREENSIT, Holme-on Swale Thirsk.
2534 III. (£3), & 2535 R. N.—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale.
H. C.—2540.

Class 333.—*Wensleydale Yearling Ewes, shown in Wool* [9 entries.]

2549 I (£10.)—JOHN A. WILLIS, Manor House, Carperby, Yorks
2542 II. (£5.)—LORD HENRY BENTINCK M.P., Underley Hall, Kirkby Lonsdale.
2545 III. (£3.)—JOHN WILLIAM GREENSIT, Holme-on-Swale, Thirsk, Yorks.
2544 R. N.—F. CALVERT BUTLER, Greenlands Farm, near Carnforth.
H. C.—2548.

Class 334.—*Wensleydale Shearling Rams*[3] [6 entries.]

2554 I. (£10.)—JOHN S THOMPSON, Snotterton Hall, Winston, Darlington for Snotterton Goalkeeper.
2550 II. (£5.)—F. E GIBSON Hestholm, Leyburn Yorks, for Darlington.
2551 III. (£3.)—A G RAMSHAY, East Appleton, Catterick.
2553 R. N.—T W. STEPHENSON Denton Grange, W. Heighington, Co Durham, for Hoggarth's Defeated 2nd.

Class 335.—*Three Wensleydale Shearling Ewes.*[3] [5 entries]

2559 I. (£10)—WILLIAM DINSDALE Low Bolton Redmire, Yorks
2557 II. (£5), & 2558 R.N.—T E CLARK, Challan Hall, Silverdale Lancs.
2556 III. (£3.) T W. BAINBRIDGE, Gaylesfield Farm, Richmond, Yorks.

Lonks.[4]

Class 336.—*Lonk Rams, Shearling and upwards.* [2 entries.]

2562 I. (£10.)—EDWARD SMITH, Summerhouse Farm, Cowling, Crosshills, Keighley, for Summerhouse Stamp 2nd.
2561 R.N.—JAMES HARDISTY & WILLIAM BENSON, 141 Main Street, Addingham Ilkley, Yorkshire, for Ling Bob.

Class 337.—*Lonk Ram Lambs.* [3 entries.]

2564 I. (£10), & 2563 II. (£5.)—EDWARD SMITH, Summerhouse Farm, Cowling, Crosshills, Keighley.
2565 R. N.—SIR JOHN O. S. THURSBY, BART., Ormerod House, Burnley.

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[1] £25 towards these Prizes were given by the Wensleydale Longwool Sheep Breeders' Association.

[2] Champion Prize of £10 given by the Wensleydale Longwool Sheep Breeders' Association for the best Exhibit in Classes 329 to 335.

[3] Prizes given by the Darlington Local Committee. Open only to animals from flocks of not more than 20 ewes.

[4] £10 towards these Prizes were given by the Lonk Sheep Breeders' Association.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 338.—*Three Lonk Shearling Ewes.* [1 entry.]

2566 **I.** (**£10.**)—SIR JOHN O. S. THURSBY, BART, Ormerod House, Burnley.

Derbyshire Gritstones.

Class 339.—*Derbyshire Gritstone Rams, Shearling and upwards.* [1 entry.]

2567 **I.** (**£10.**)—SIR JOHN O. S. THURSBY, BART, Ormerod House, Burnley, Lancs, for Harewood.

Class 340.—*Three Derbyshire Gritstone Shearling Ewes.* [No entry.]

Kent or Romney Marsh.[1]

Class 341.—*Kent or Romney Marsh Two-Shear Rams.* [8 entries.]

2573 **I.** (**£10, & Champion**[2]), 2574 **II.** (**£5**), & 2575 **III.** (**£3.**)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

2572 **R. N.**—OSMOND C. MILLEN, Adisham Court, Canterbury, for **Combe Bank No. 15 of 1918.**

C.—2571.

Class 342.—*Kent or Romney Marsh Shearling Rams.* [36 entries.]

2609 **I.** (**£15, & R. N. for Champion.**[2]), & 2608 **V.** (**£3.**)—C. F. WOOD, Teynham Court, Sittingbourne, Kent,

2583 **II.** (**£10**).—GEORGE FOSTER CLARK, Boughton Mount, Boughton Monchelsea, Maidstone.

2602 **III.** (**£5**), & 2601 **IV.** (**£3.**)—J EGERTON QUESTED, The Firs, Cheriton, Kent.

2597 **R. N.**—OSMOND C. MILLEN, Adisham Court, Canterbury.

C.—2588.

Class 343.—*Five Kent or Romney Marsh Shearling Rams.* [11 entries.]

2620 **I.** (**£20.**)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.
2618 **II.** (**£15.**)—OSMOND C. MILLEN, Adisham Court, Canterbury.
2622 **III.** (**£10.**)—WALTER F. WOOD, Chekes Court, Sittingbourne, Kent.
2615 **IV.** (**£5.**)—L. H. & G. W. FINN, Westwood Court, Faversham.
2617 **R. N.**—THE HADLOW FLOCK COMPANY, Somerhill Estate Office, Tonbridge.

C.—2621.

Class 344.—*Three Kent or Romney Marsh Ram Lambs.* [9 entries.]

2627 **I.** (**£10.**)—THE HADLOW FLOCK COMPANY, Somerhill Estate Office, Tonbridge.
2630 **II.** (**£5**), & 2629 **III.** (**£3.**)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

H. C.—2626. **C.**—2623.

Class 345.—*Three Kent or Romney Marsh Shearling Ewes.* [10 entries.]

2640 **I.** (**£10, & Champion.**[3])—J. EGERTON QUESTED, The Firs, Cheriton, Kent.
2634 **II.** (**£5**), & 2635 **R. N.**—L. H. & G. W. FINN, Westwood Court, Faversham.
2632 **III.** (**£3.**)—LIEUT-COL. MATTHEW G. E. BELL, Bourne Park, Canterbury, for **Combe Bank 11, 4 & 24.**

C.—2637.

Class 346.—*Three Kent or Romney Marsh Ewe Lambs.* [10 entries.]

2647 **I.** (**£10**), & **R. N. for Champion.**[3])—OSMOND C. MILLEN, Adisham Court, Canterbury.
2650 **II.** (**£5**), & 2649 **III.** (**£3.**)—J. EGERTON QUESTED, The Firs, Cheriton, Kent.

H. C.—2645. **C.**—2651.

Cotswolds.[4]

Class 347.—*Cotswold Shearling Rams.* [8 entries.]

2658 **I.** (**£10**), & 2659 **R. N.**—FREDERICK NEWMAN, Cold Aston, Bourton-on-the-Water.
2657 **II.** (**£5**), & 2656 **III.** (**£3.**)—WILLIAM GARNE, Ablington, Fairford, Glos.

H. C.—2653, 2655. **C.**—2652.

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[1] £83 towards these Prizes were given by the Kent or Romney Marsh Sheep Breeders' Association

[2] Champion Prize of £10 10s. given by the Kent or Romney Marsh Sheep Breeders' Association for the best Ram in Classes 341 and 342.

[3] Champion Prize of £10 10s. given by the Kent or Romney Marsh Sheep Breeders' Association for the best Pen of Ewes or Ewe Lambs in Classes 345 and 346.

[4] £18 towards these Prizes were given by the Cotswold Sheep Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 348.—*Three Cotswold Ram Lambs.* [4 entries.]

2662 I. (£10), & 2663 III. (£3.)—WILLIAM GARNE, Ablington, Fairford, Glos.
2661 II. (£5.) & 2660 R. N.—COL. EDWIN, P. BRASSEY, The Manor Farm, Upper Slaughter, Glos.

Class 349.—*Three Cotswold Shearling Ewes.* [4 entries.]

2667 I. £10), & 2666 II. (£5.)—WILLIAM GARNE, Ablington, Fairford, Glos.

Class 350.—*Three Cotswold Ewe Lambs.* [3 entries.]

2669 I. (£10), & 2670 II. (£5.)—WILLIAM GARNE, Ablington, Fairford, Glos.
2668 III. (£3.)—COL. EDWIN P. BRASSEY, The Manor Farm, Upper Slaughter, Glos.

Devon Long-Wools.[1]

Class 351.—*Devon Long-Wool Shearling Rams.* [2 entries.]

2671 I. (£10), & 2672 II. (£5.)—FREDERICK WHITE, Torweston, Williton, Somerset.

Class 352.—*Three Devon Long-Wool Ram Lambs.* [1 entry.]

2673 I. (£10.)—FREDERICK WHITE, Torweston, Williton, Somerset.

Class 353.—*Three Devon Long-Wool Shearling Ewes.* [2 entries.]

2675 I. (£10), & 2674 II. (£5.)—FREDERICK WHITE, Torweston, Williton, Somerset.

South Devons.[2]

Class 354.—*South Devon Two-Shear Rams.* [2 entries.]

2676 I. (£10), & 2677 II. (£5.)—JOHN STOOKE, Sherford, Brixton, Plymouth.

Class 355.—*South Devon Shearling Rams.* [3 entries.]

2680 I. (£10.)—JOHN STOOKE, Sherford, Brixton, Plymouth.
2678 II. (£5.)—WILLIAM HAWKE, JUNR., Trebudannon, St. Columb, Cornwall.

Class 356.—*Three South Devon Ram Lambs.* [2 entries.]

2681 I. (£10.)—WILLIAM HAWKE, JUNR., Trebudannon, St. Columb, Cornwall.
2682 II. (£5.)—JOHN STOOKE, Sherford, Brixton, Plymouth.

Class 357.—*Three South Devon Shearling Ewes.* [1 entry.]

2683 I. (£10.)—WILLIAM HAWKE, JUNR., Trebudannon, St. Columb, Cornwall.

Class 358.—*Three South Devon Ewe Lambs.* [3 entries.]

2684 I. (£10.)—WILLIAM HAWKE JUNR., Trebudannon, St. Columb, Cornwall.
2685 II. (£5.)—JOHN STOOKE, Sherford, Brixton, Plymouth.

Dartmoors.[3]

Class 359.—*Dartmoor Rams, Two-Shear and upwards.* [3 entries.]

2689 I. (£10.)—JOHN R. T. KINGWELL, Great Aish, South Brent, South Devon, for ram born 1917, bred by John Dawe, Week Farm, Tavistock.
2688 II. (£5.)—W. A. JOHNS & SONS, Cleave, Kelly, Lifton, Devon, for ram born 1918.

Class 360.—*Dartmoor Shearling Rams.* [3 entries.]

2691 I. (£10.)—W. A. JOHNS & SONS, Cleave, Kelly, Lifton, Devon.
2692 II. (£5.)—JOHN R. T. KINGWELL, Great Aish, South Brent, South Devon.

Class 361.—*Three Dartmoor Shearling Ewes.* [4 entries.]

2696 I. (£10.)—H. NORTHEY, Lake, Lifton, Devon.
2695 II. (£5), & 2694 R. N.—JOHN R. T. KINGWELL, Great Aish, South Brent, South Devon.

Cheviots.[4]

Class 362.—*Cheviot Rams, Two-Shear and upwards.* [3 entries.]

2699 I. (£10, & Champion[5]), & 2698 III. (£3.)—ROBSON & DODD, Newton, Bellingham, for Yearle Whin.
2697 II. (£5.)—JOHN ROBSON, Newton, Bellingham, Northumberland.

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[1] £15 towards these Prizes were given by the Devon Long-Woolled Sheep Breeders' Society.

[2] £30 towards these Prizes were given by the South Devon Flock Book Association.

[3] £15 towards these Prizes were given by the Dartmoor Sheep Breeders' Association.

[4] £20 towards these Prizes were given by Breeders of Cheviot Sheep.

[5] The "Borthwick" Challenge Cup given by the Cheviot Sheep Society for the best Cheviot Ram or Ewe in Classes 362-365.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 363.—*Cheviot Shearling Rams.* [3 entries.]

2702 **I.** (£10, & **R. N.** for Champion[1]), & 2701 **II.** (£5.)—JOHN ROBSON, Newton, Bellingham.
2700 **III.** (£3.)—JOHN ROBSON, Lynegar, Watten, Caithness.

Class 364.—*Cheviot Ewes, Two-Shear and upwards, with their Lamb at foot.* [3 entries.]

2703 **I.** (£10.)—JOHN ROBSON, Lynegar, Watten, Caithness.
2705 **II.** (£5), & 2704 **III.** (£3.)—JOHN ROBSON, Newton, Bellingham, for ewe born 1918.

Class 365.—*Cheviot Shearling Ewes.* [3 entries.]

2708 **I.** (£10), & 2707 **III.** (£3.)—JOHN ROBSON, Newton, Bellingham, Northumberland.
2706 **II.** (£5.)—JOHN ROBSON, Lynegar, Watten, Caithness.

Herdwicks.[2]

Class 366.—*Herdwick Rams, Two-Shear and upwards.* [4 entries.]

2710 **I.** (£10.)—J. J. SHEPHERD, Hobe House. Dent, Yorks.
2709 **II.** (£5.)—LORD LECONFIELD, Cockermouth Castle, Cumberland, for **Dash Jerry.**
2712 **R. N.**—S. D. STANLEY-DODGSON, Tarnbank, Cockermouth, for **Wastwater.**

Class 367.—*Herdwick Shearling Rams.* [3 entries.]

2715 **I.** (£10), & 2714 **R. N.**—S. D. STANLEY-DODGSON, Tarnbank, Cockermouth, for **Routen Royal.**
2713 **II.** (£5.)—J. J. SHEPHERD, Hole House, Dent, Yorks.

Class 368.—*Three Herdwick Shearling Ewes.* [2 entries.]

2717 **I.** (£10.)—S. D. STANLEY-DODGSON, Tarnbank, Cockermouth, for ewes bred by the Earl of Lonsdale, Whitehaven Castle.

Welsh Mountain.[3]

Class 369.—*Welsh Mountain Rams, Two-Shear and upwards.* [5 entries.]

2718 **I.** (£10.)—THE HON. E. L. MOSTYN, The Wern Farm, Whitford, Holywell, N. Wales, for **Wern Hopeful.**
2719 **II.** (£5)—MAJOR ERIC J. W. PLATT, Gorddinog, Llanfairfechan, N. Wales, for **Madryn Klondyke.**
2721 **R. N.**—THE UNIVERSITY COLLEGE OF NORTH WALES, College Farm, Aber, Bangor, for **Snowdon K 2.**
H. C.—2720.

Class 370.—*Welsh Mountain Shearling Rams.* [6 entries.]

2724 **I.** (£10.)—MAJOR ERIC J. W. PLATT, Gorddinog, Llanfairfechan, N. Wales, for **Madryn Llewelyn.**
2726 **II.** (£5), & 2727 **R. N.**—THE UNIVERSITY COLLEGE OF NORTH WALES, College Farm, Aber, Bangor, for **Snowdon L 15.**
H. C.—2725.

Class 371.—*Three Welsh Mountain Shearling Ewes.* [5 entries.]

2732 **I.** (£10), & 2731 **R. N.**—THE UNIVERSITY COLLEGE OF NORTH WALES, College Farm, Aber, Bangor.
2729 **II.** (£5.)—R. M. GREAVES, Wern, Portmadoc.
H. C.—2730.

Black-faced Mountain.[4]

Class 372.—*Black-faced Mountain Rams, Two-Shear and upwards.* [5 entries.]

2735 **I.** (£10.)—OCTAVIUS MONKHOUSE, Cowshill, Wearhead, co. Durham, for **Brown Spot.**
2738 **II.** (£5.)—JOHN ROBSON, Newton, Bellingham, Northumberland.
2737 **III** (£3), & 2736 **R. N.**—MESSRS. MUNAY, Tarset Hall, Bellingham, Northumberland, for **Little Jim.**

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[1] The "Borthwick" Challenge Cup given by the Cheviot Sheep Society for the best Cheviot Ram or Ewe in Classes 362-365

[2] £15 towards these Prizes were given by the Herdwick Sheep Breeders' Association.

[3] £10 towards these Prizes were given by the Welsh Mountain Sheep Flock Book Society.

[4] £20 towards these Prizes were given by the English Blackface Sheep Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 373.—*Black-faced Mountain Shearling Rams.* [6 entries.]

2742 I. (£10.)—MESSRS. MUNAY, Tarset Hall, Bellingham, Northumberland, for High Creighton Hero.
2743 II. (£5.)—GEOFFREY ROBSON, Closehill, Bellingham.
2740 III. (£3), & 2739 R. N.—OCTAVIUS MONKHOUSE, Cowshill, Wearhead, Co. Durham. H.C.—2741.

Class 374.—*Black-faced Mountain Ewes, Two-Shear and upwards, (With their lamb at foot.)* [4 entries.]

2748 I. (£10.)—JOHN ROBSON, Newton, Bellingham, for ewe born 1917.
2746 II. (£5), & 2745 III. (£3.)—OCTAVIUS MONKHOUSE, Cowshill, Wearhead, Co. Durham.

Class 375.—*Black-faced Mountain Shearling Ewes.* [4 entries.]

2749 I. (£10), & 2750 III. (£3.)—OCTAVIUS MONKHOUSE, Cowshill, Wearhead, Co Durham.
2752 II. (£5.)—JOHN ROBSON, Newton, Bellingham.
2751 R. N.—GEOFFREY ROBSON, Closehill, Bellingham.

Black-faced Dales Bred.[1]

To be shown unshorn.

Class 376.—*Black-faced Dales Bred Rams, born previous to* 1918. [3 entries.]

2755 I. (£10.)—JOHN LAWRENCE PEACOCK, Punchard House, Arkengarthdale, Richmond, Yorks.
2754 II. (£5.)—JAMES PEACOCK, Spanham House, Barningham, Barnard Castle.
2753 III. (£3.)—JOSEPH WM. DENT, Fair View, Middleton-in-Teesdale.

Class 377.—*Black-faced Dales Bred Rams, born in* 1918. [6 entries.]

2756 I. (£10.)—THOMAS ADDISON, Bowes, Darlington.
2761 II. (£5.)—JOSEPH RAINE, Brow Farm, Dufton, Appleby, Westmoreland.
2758 III. (£3.)—T. GILBERT DUGDALE, Gilmonby Hall, Bowes, Darlington.
2760 R. N.—JOHN LAWRENCE PEACOCK, Punchard House, Arkengarthdale.

Class 378.—*Black-faced Dales Bred Ram Hogs, born in* 1919. [8 entries.]

2768 I. (£10.)—JOHN LAWRENCE PEACOCK, Punchard House, Arkengarthdale, Richmond, Yorks.
2767 II. (£5.)—JAMES PEACOCK, Spanham House, Barningham, Barnard Castle.
2769 III. (£3.)—JOSEPH RAINE, Brow Farm, Dufton, Appleby, Westmoreland.
2762 R. N.—GEORGE WM. BAINBRIDGE, Bink House, Kelton, Middleton-in-Teesdale

Class 379.—*Three Black-faced Dales Bred Gimmer Hogs, born in* 1919. [2 entries.]

2771 I. (£10.)—JAMES PEACOCK, Spanham House, Barningham, Barnard Castle.
2770 II. (£5.)—JOSEPH WILLIAM DENT, Fair View, Middleton-in-Teesdale.

PIGS.

Large Whites.

Class 380.—*Large White Boars, furrowed in or before* 1918. [13 entries]

2777 I. (£10, Champion,[2] & Champion.[3])—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for Worsley Jay 35th 20419, born Jan. 26, 1915; *s.* Jay of Worsley 12th 16143, *d.* Worsley Lady 10th 39620 *by* Worsley Emperor 38th 15479.
2776 II. (£5, & R. N. for Champion.[2])—SIR GILBERT GREENALL, BT., C.V.O., for Bourne Bulwark 2nd 20921, born Jan. 13, 1916, bred by Edmund Wherry, Bourne, Lincs; *s.* Worsley Turk 66th 19281, *d.* Bourne Bramble 48th 37728 *by* Bourne Banner 5th 15947.
2772 III. (£3.)—CHIVERS & SONS, LTD., Histon, Cambridge, for Histon Thor 22491, born March 2, 1917; *s.* Spalding Vulcan 17703, *d.* Histon Princess 2nd 44442 *by* Borrowfield Conqueror 17047

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[1] Prizes given by the Darlington Local Committee.

[2] Champion Gold Medal given by the National Pig Breeders' Association for the best Large White Boar in Classes 380-383.

[3] Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Large White Pig in Classes 380-386.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

2782 **IV.** (£2.)—EDMUND WHERRY, Bourne, Lincs., for **Bourne Bar None 20847**, born Jan. 14, 1916; *s.* Worsley Turk 66th 19281, *d.* Buttercup of Bourne 40758 *by* Eclipse of Altrincham 13563.

2783 **R. N.**—ALFRED W. WHITE, Hillegom, Spalding, for **Banner of Spalding.**
H. C.—2775. C.—2784.

Class 381.—*Large White Boars, farrowed in* 1919, *before July* 1.[1] [6 entries.]

2786 **I.** (£10.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for **Worsley Jay 93rd 27631**, born Jan. 16; *s.* Worsley Jay 35th 20419, *d.* Queen of Worsley 11th 50330 *by* Turk of Rayton 16393.

2790 **II.** (£5.)—EDMUND WHERRY, Bourne, Lincs., for **Bourne Big Ben 9th 26307**, born Jan. 4; *s.* Bourne Big Ben 22107, *d.* Bourne Buttercup 2nd 43814 *by* Bourne Banger 2nd 17111.

2787 **III.** (£3.)—ROWLAND P. HAYNES, Delves Green Farm, Wednesbury, Staffs., for **Banner of Caldmore 25879**, born Jan. 7, bred by A. W. White, Hillegom, Spalding; *s.* Banner of Spalding 21987, *d.* Perfection of Spalding 50260 *by* Jay of Wyboston 16149.

2789 **R. N.**—F. SMITH, Helsby Creamery, near Warrington, for **Spalding Wonder 7th.**

Class 382.—*Large White Boars, farrowed in* 1919, *on or after July* 1. [14 entries.]

2803 **I.** (£10.[1])—EDMUND WHERRY, Bourne, Lincs., for **Bourne Big Ben 26th**, born July 3: *s.* Bourne Big Ben 22107, *d.* Bourne Empress 17th 58198 *by* Emperor of Pinchbeck 21077.

2800 **II.** (£5.[1])—F. P. & F. J. PITCHER, Mangapp Manor, Burnham-on-Crouch, Essex, for **Spalding Banner 3rd** (Vol. 37), born July 18, bred by A. W. White, Hillegom Spalding; *s.* Banner of Spalding 21987, *d.* Spalding Queen Mary 3rd 50504.

2804 **III.** ((£3.[1])—ALFRED W. WHITE, Hillegom, Spalding, Lincs., for **Spalding Banner 4th**, born July 18; *s.* Banner of Spalding 21987, *d.* Spalding Queen Mary 3rd 50504 *by* Turk of Rayton 16393.

2801 **IV.** (£2.)—F. SMITH, Helsby Creamery, Warrington, for **Fenton Turk 26443**, born July 1, bred by A. Deighton, Church Fenton, Yorks: *s.* Worsley Turk 105th 24993, *d.* Kitchen Maid 49884 *by* Kitchener 20083.

2792 **R. N.**—ARTHUR B. EDWARDS, Brewery House, Harlow, for **Bottesford Jay 25th.**
H. C.—2797. C.—2802.

Class 383.—*Large White Boars, farrowed in* 1920. [28 entries.]

2806 **I.** (£10.)—DANIEL R. DAYBELL, Bottesford, Nottingham, for boar, born Jan. 2; *s.* Bourne Bulwark 2nd 20921, *d.* Marigold of Bottesford 54458 *by* Turk of Belton 21411.

2816 **II.** (£5.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for **Walton Boy 4th**, born Jan. 2; *s.* Sapperton Boy 24471, *d.* Belle of Walton 1st 46264 *by* Turk of Worsley 10th 17775.

2820 **III.** (£3.)—ROWLAND P. HAYNES, Delves Green Farm, Wednesbury, Staffs., for boar, born Jan. 1: *s.* Lion Heart of Caldmore 26927, *d.* Amelia of Caldmore 36th *by* Kitchener of Caldmore 22553.

2811 **IV.** (£2.)—THE EARL OF ELLESMERE, Worsley Hall, nr. Manchester, for boar, born Jan. 1; *s.* Stetchworth Jay 2nd 21341, *d.* Queen of Stetchworth 50322, *by* Turk of Histon 20289.

2829 **R. N.**—EDMUND WHERRY, Bourne, Lincs., for **Bourne Bar-None 102nd.**
H. C.—2831. C.—2812, 2818, 2827, 2832.

Class 384.—*Large White Breeding Sows, farrowed in or before* 1918. [19 entries.]

2848 **I.** (£10, Champion,[3] & R. N. for Champion.[2])—EDMUND WHERRY, Bourne, Lincs., for **Bourne Queen Anne 52772**, born Jan. 7, 1918, farrowed Jan. 23: *s.* Emperor of Pinchbeck 21077, *d.* Queen Anne of Pinchbeck 47548 *by* That 'Im of Worsley 1st 19095.

2834 **II.** (£5.)—CHIVERS & SONS, LTD., Histon, Cambridge, for **Histon Bertha 2nd 53923**, born Sept. 2, 1917, farrowed Jan. 4; *s.* Spalding Vulcan 17703, *d.* Histon Beryl 4th 44418 *by* Western Volunteer 17855.

2839 **III.** (£3.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for **Queen of Worsley 11th 50330**, born July 29, 1919, farrowed Jan. 9, bred by Alfred W. White, Hillegom, Spalding, Lincs.; *s.* Turk of Rayton 16393, *d.* Queen Mary 41886 *by* Stanwardine Jay 16345.

2843 **IV.** (£2.)—ROWLAND P. HAYNES, Delves Green Farm, Wednesbury, Staffs., for **Caldmore Miss Hollingsworth 49204**, born Jan. 2, 1915, farrowed Jan. 18: *s.* Bridegroom of Bourne 15991, *d.* Miss Hollingsworth 41740 *by* Mollington Jay of Bottesford 10965.

2835 **R. N.**—ARTHUR B. EDWARDS, Brewery House, Harlow, for **Wyboston Amy 11th.**
H. C.—2846. C.—2838.

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[1] Prizes given by the National Pig Breeders' Association.

[2] Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Large White Pig in Classes 380-386.

[3] Champion Gold Medal given by the National Pig Breeders' Association for the best Large White Sow in Classes 384-386.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 385.—*Large White Sows, farrowed in* 1919, *before July* 1. [10 entries.]

2879 **I.** (£10, & R. N. for Champion.[1])—ROWLAND P. HAYNES, Delves Green Farm, Wednesbury, Staffs., for **Perfection of Caldmore**, born Jan. 7, bred by A. W. White, Hillegom, Spalding, Lincs.; *s.* Banner of Spalding 21987, *d.* Perfection of Spalding 50260 *by* Jay of Bottesford 16149.

2861 **II.** (£5.)—EDMUND WHERRY, Bourne, Lincs., for **Bourne Beauty 58126**, born Jan. 2; *s.* Bourne Big Ben 22107, *d.* Bouquet of Bourne 37698 *by* Pode Hole Eclipse 16253.

2857 **III.** (£3.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for **Worsley Queen 160th**, born Jan. 22; *s.* Jay of Worsley 14th 16147, *d.* Worsley Queen 64th 48038 *by* Worsley Emperor 68th 19241.

2858 **R. N.**—SIR GILBERT GREENALL, BT., C.V.O., for **Worsley Fairy 17th.**
H. C.—2855. C.—2853.

Class 386.—*Large White Sows, farrowed in* 1919, *on or after July* 1. [15 entries.]

2871 **I.** (£10.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for **Empress of Walton 9th**, born July 2, bred by R. Bourne, Dowse Green; *s.* Worsley Banner 3rd 24883, *d.* Cholmondeley Empress 52980 *by* Hercules of Cholmondeley 21123.

2870 **II.** (£5.)—SIR GILBERT GREENALL, BT., C.V.O., for **Empress of Walton 6th**, born July 1, bred by R. Bourne, Dowse Green, Cholmondeley, Malpas; *s.* Worsley Banner 3rd 24883, *d.* Bottesford Empress 21st 46320 *by* Ringleader of Bottesford 2nd 17623.

2875 **III.** (£3.)—EDMUND WHERRY, Bourne, Lincs., for **Bourne Bouquet 15th**, born July 30; *s.* Bourne Bandmaster 50th 22071, *d.* Bourne Bouquet 9th 52702 *by* Bourne Bar-None 21847.

2869 **R. N.**—JOHN FILLINGHAM, The George Hotel, Grantham, for **Grantham Stormer.**
H. C.—2867. C.—2864, 2865.

Class 387.—*Three Large White Sows, farrowed in* 1920. [10 entries.]

2879 **I.** (£10.)—SIR GILBERT GREENALL, BT., C.V.O., Walton Hall, Warrington, for **Walton Belles**, born Jan. 2; *s.* Sapperton Boy 24471, *d.* Belle of Walton 1st 46264 *by* Turk of Worsley 10th 17775.

2877 **II.** (£5.)—DANIEL R. DAYBELL, Bottesford, Nottingham, for sows, born Jan. 6; *s.* Worsley Jay 87th 27619, *d.* Bottesford Buttercup 16th 52626 *by* Worsley Turk 95th 22971.

2884 **III.** (£3.)—E. TOMLIMSON, East House Farm, Tockwith, Yorks., for sows, born Jan. 3; *s.* Hercules of Walton 4th 23985, *ds.* Lady of Tockwith 54172 *by* Spalding Turk 9th 21317 and Fragrance of West Derby 46994 *by* Turk of Worsley 10th 17775.

2885 **R. N.**—EDMUND WHERRY, Bourne, Lincs.
H. C.—2886. C.—2881.

Middle Whites.

Class 388.—*Middle White Boars, farrowed in or before* 1918. [8 entries.]

2888 **I.** (£10, Champion[2], & R. N. for Champion[3]).—JOHN CHIVERS, Wychfield, Cambridge, for **Histon Shrewsbury 2nd 28081**, born Feb. 5, 1918; *s.* Shrewsbury 19511, *d.* Welcome Histon 51900, *by* Sundon Scott 20599.

2892 **II.** (£5.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for **Dividend of Wharfedale 20511**, born Jan. 7, 1915, bred by the Earl of Sefton, Croxteth Hall, Liverpool; *s.* Croxteth Banker 2nd 16733, *d.* Tarbock Pattie 13th 22084 *by* Walton Turret 12th 9433.

2893 **III.** (£3.)—LEOPOLD C. PAGET, for **Wharfedale Marvel 25653**, born Jan. 6, 1918; *s.* Wharfedale Corporal 19539, *d.* Mascot of Wharfedale 48500 *by* Cow Boy 20489.

2891 **R. N.**—IVOR L. JAMES, Beechcroft, Stafford, for **Prestwood Acrobat 1st.**
H. C.—2894.

Class 389.—*Middle White Boars, farrowed in* 1919, *before July* 1.[4] [7 entries.]

2895 **I.** (£10.)—JOHN CHIVERS, Wychfield, Cambridge, for **Histon Woodman 28099**, born Jan. 3; *s.* Sundon Shrewsbury 23243, *d.* Lady Woodlands 56880 *by* Sundon Scott 20599.

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[1] Champion Gold Medal given by the National Pig Breeders' Association for the best Large White Sow in Classes 384-386.

[2] Champion Gold Medal given by the National Pig Breeders' Association for the best Middle White Boar in Classes 388-391.

[3] Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Middle White Pig in Classes 388-394.

[4] Prizes given by the National Pig Breeders' Association.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

2898 II. (£5.)—W. B. HILL, Vauxhall, The Scotlands, Cannock Road, Wolverhampton, for boar, born Jan. 1; *s.* Prestwood Acrobat 1st 23197. *d.* Prestwood Rosadora 1st 45806 *by* Prestwood Bugler 14451.

2900 III. (£3.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for **Wharfedale Jellico** 28343, born Jan. 23; *s.* Preserver of Wharfedale 25493, *d.* Wharfedale Revella 6th 45904 *by* Wharfedale Corporal 19539.

2899 R. N.—W. L. HOLIDAY, Stotford Head, Cornhill-on-Tweed, for **Wharfedale Royal.**
H. C.—2897.

Class 390.—*Middle White Boars, farrowed in* 1919, *on or after July* 1.[1] [3 entries.]

2903 I. (£10.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for boar, born Aug. 21; *s.* Wharfedale Ubique 2nd 28365. *d* Wharfedale Aisne 48602 *by* Wharfedale Corporal 16539.

2902 II. (£5.)—L. HARRISON & CO., LTD, Coolham, Shipley, Sussex, for **Shipley David,** born Aug. 3; *s.* Prestwood David 6th 28233 *d.* Prestwood Rosadora 7th 57180 *by* Prestwood Acrobat 1st 23197.

Class 391.—*Middle White Boars, farrowed in* 1920. [14 entries.]

2914 I. (£10, & R.N. for Champion.[2])—LEOPOLD C. PAGET, Middlethorpe Hall, York, born Jan. 6; *s.* Wharfedale Jumper 28345, *d* Harthay Perfection of Arcadia *by* Shrewsbury 19511.

2912 II. (£5.)—LEOPOLD C. PAGET, for boar, born Jan. 3; *s.* Wharfedale Lifeboat 28351, *d.* Wharfedale Surety 57482 *by* Croxteth Banker 4th 20503.

2906 III. (£3.)—S F. EDGE, Gallops Homestead, Ditchling, Sussex, for **Albany King Shrewsbury,** born Jan. 3; *s.* Shrewsbury of Albany 21777, *d.* Albany Fuchsia 51234 *by* Bookham Venture 21637.

2916 IV. (£2.)—DR. M. J. ROWLANDS, Nash Farm, Keston, Kent, for **Keston George Frederick,** born Jan. 4; *s.* Albany Shrewsbury 25129, *d.* Mabel of Keston 63242 *by* Hadleigh Phœnix 20517.

2908 R. N.—W. B. HILL, Vauxhall, The Scotlands, Cannock Road, Wolverhampton.
H. C.—2911, 2917, 2918.

Class 392.—*Middle White Breeding Sows, farrowed in or before* 1918. [10 entries.]

2921 I. (£10, Champion[3], & Champion.[4])—JOHN CHIVERS, Wychfield, Cambridge, for **Histon Pianissimo** 51542, born Jan. 13, 1916, farrowed Feb. 4; *s.* Shrewsbury 19511, *d.* Perfection's Pride 40036 *by* Hollywell Jonathan 14435.

2925 II. (£5.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for **Midlothian Robina** 51666, born Jan. 6, 1917, farrowed March 21, bred by the Earl of Rosebery, K G., K.T. Dalmeny, Edinburgh; *s.* Cow Boy 20489, *d.* Midlothian Rose 43058 *by* Actor of Hatchfield 16693.

2922 III. (£3.)—JOHN CHIVERS, for **Pendley Joyce** 51756, born April 20, 1917, farrowed Feb. 1, bred by J. G. Williams, Pendley Manor, Tring, Herts.; *s.* Castlecroft Jonathan 20469, *d.* Wharfedale Joyce 43272 *by* Earl of Wharfedale 16749.

2919 R. N.—H. R. BEETON, Hammonds, Checkendon, Reading, for **Histon Pride 4th.**
H. C.—2920, 2923, 2927.

Class 393.—*Middle White Sows, farrowed in* 1919, *before July* 1. [12 entries.]

2934 I. (£10, & R.N. for Champion.[4])—W. B. HILL, Vauxhall, The Scotlands, Cannock Road, Wolverhampton, for sow, born Jan. 16; *s.* Prestwood Acrobat 23197, *d.* Prestwood Alberta 3rd 57122, *by* Prestwood Jonathan 1st 20369

2931 II. (£5.)—JOHN CHIVERS, Wychfield, Cambridge, for **Histon Prudence 2nd,** born Feb. 1; *s.* Bookham of Harthay 19369, *d.* Histon Prudence 63102, *by* Durbar of Histon 21679.

2938 III. (£3)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for **Wharfedale Twinkle** 63840, born Jan. 3; *s.* Wharfedale Resistance 25657, *d.* Wharfedale Sparkling 51976 *by* Dividend of Wharfedale 20511.

2929 R. N.—H. R. BEETON, Hammonds, Checkendon, Reading, for **Watford Grace.**
H. C.—2935 2939, 2940, C.—2937.

Class 394.—*Middle White Sows, farrowed in* 1919, *on or after July* 1. [4 entries.]

2941 I. (£10.)—JOHN CHIVERS, Wychfield, Cambridge, for **Histon Choice 12th,** born July 2; *s.* Histon Wanderer 25349, *d.* Rose of Croxteth 40076 *by* Blythe Reveller 15575.

2942 II. (£5.)—JOHN CHIVERS, for **Histon Choice 13th,** born July 2; *s.* Histon Wanderer 25349, *d.* Rose of Croxteth 40076 *by* Blythe Reveller 15575.

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[1] Prizes given by the National Pig Breeders' Association.

[2] Champion Gold Medal given by the National Pig Breeders' Association for the best Middle White Boar in Classes 388-391.

[3] Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Middle White Pig in Classes 388 324

[4] Champion Gold Medal given by the National Pig Breeders' Association for the best Middle White Sow in Classes 392-394.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

2943 III. (£3.)—L. HARRISON & CO., LTD., Coolham, Shipley, Sussex, for **Shipley Alberta**, born Aug. 9; *s.* Prestwood David 6th 28233, *d.* Prestwood Alberta 6th 57128 *by* Don of West Derby 20513.

2944 R. N.—LEOPOLD C. PAGET, Middlethorpe Hall, York, for **Arcadian Pride 1st.**

Class 395.—*Three Middle White Sows, farrowed in* 1920. [13 entries.]

2954 I. (£10.)—LEOPOLD C. PAGET, Middlethorpe Hall, York, for sows, born Jan. 6 and Jan. 7; *ss.* Wharfedale Jumper 28345 and Preserver of Wharfedale 25493, *ds.* Harthay Perfection of Arcadia *by* Shrewsbury 19511 and Wharfedale Opal 57442 *by* Pendley Lad 23191.

2956 II. (£5.)—DR. M. J. ROWLANDS, Nash Farm, Keston, Kent, for sows, born Jan. 13; *s* Albany Shrewsbury 25129. *d.* Prestwood Prolific 57174 *by* Prestwood Acrobat 1st 23129.

2949 III. (£3.)—W. B. HILL, Vauxhall, The Scotlands, Cannock Road, Wolverhampton. for sows born Jan. 7 and Jan. 18; *s.* Scotty of Prestwood 25533, *ds.* Prestwood Alberta 57122 *by* Prestwood Jonathan 1st 20569, and Prestwood Annie 36970 *by* Prestwood Bugler 14451.

2948 R. N.—S. F. EDGE, Gallops Homestead, Ditchling, Sussex, for **Albany Fuschia 16th, Albany Fuschia 18th, and Albany Fuschia 19th.**

H. C.—2950, 2953, 2957. C.—2945, 2951.

Tamworths.

Class 396.—*Tamworth Boars, farrowed in or before* 1918. [4 entries.]

2958 I. (£10, & R. N. for Champion.[1])—ROBERT IBBOTSON, Knowle, Warwickshire for **Basildon Max** 25683, born March 24, 1918, bred by Major Morrison, D.S.O., Basildon Park, Reading; *s.* Brodsworth Able 23311, *d.* Knowle Lady Manners 2nd 52042 *by* Knowle General Joffre 20655.

2959 II. (£5.)—ROBERT IBBOTSON, for **Knowle Cardiff** 28415, born Sept. 20, 1918; *s.* Knowle Mountaineer 3rd 23333. *d.* Knowle Model 10th 52048 *by* Knowle Arundel 21855,

2961 III. (£3.—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for **Choice of Putley** 23313, born March 15. 1917, bred by Robert Ibbotson, The Hawthorns, Knowle, Warwickshire; *s.* Kerr's Choice 19593, *d.* Queen Mary 43450 *by* Knowle Lottery 18241.

2960 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for **Basildon Sam.**

Class 397.—*Tamworth Boars, farrowed in* 1919.[2] [5 entries.]

2965 I. (£10, & Champion.[1])—B. I. PHILIP, Botts Green House, Whitacre, Birmingham. for **Whitacre Surprise** 28511, born Jan. 3; *s.* Enterprise of Whitacre 21841, *d.* Whitacre Ida 46116 *by* Kerr's Choice 19593.

2964 II. (£5.)—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading. for **Basildon Alec**, born Jan. 2; *s.* Brodsworth Able 23311, *d.* Knowle Arbury 3rd 48704 *by* Roxley Able 19627.

2962 III. (£3.)—ROBERT IBBOTSON, Knowle, Warwickshire, for **Knowle Antony 2nd** 28409, born March 10; *s.* Knowle Arundel 21855. *d.* Knowle Madeline 2nd 46010, *by* Sunstar 18269.

2966 R. N.—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for **Putley Choice.**

Class 398.—*Tamworth Boars, farrowed in* 1920. [5 entries.]

2968 I. (£10.)—ROBERT IBBOTSON, Knowle, Warwickshire, for boar, born Jan. 6; *s.* Basildon Max 25683, *d.* Knowle Model 10th 52048 *by* Knowle Arundel 21855.

2970 II. (£5.)—B. I. PHILIP, Botts Green House, Whitacre, Birmingham, for boar, born Jan. 14; *s.* Enterprise of Whitacre 21841, *d.* Whitacre Mirth 46118 *by* Lord Bobbie 18251.

2967 III. (£3.)—ROBERT IBBOTSON, for boar, born Jan. 6; *s.* Basildon Max 25683, *d.* Knowle Model 10th, 52048 *by* Knowle Arundel 21855.

2969 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.

Class 399.—*Tamworth Breeding Sows, farrowed in or before* 1918. [5 entries.]

2972 I. (£10, R. N. for Champion,[3] & R. N. for Champion.[4])—ROBERT IBBOTSON Knowle, Warwickshire, for **Knowle Beatrice 10th** 52034, born Aug. 22, 1917, farrowed Jan. 10; *s.* Knowle Ashdown 21857, *d.* Knowle Beatrice 43366 *by* Osmaston Buxus 14633.

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[1] Champion Gold Medal given by the National Pig Breeders' Association for the best Tamworth Boar in Classes 396-398.

[2] Prizes given by the National Pig Breeders' Association.

[3] Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Tamworth Pig in Classes 396-400.

[4] Champion Gold Medal given by the National Pig Breeders' Association for the best Tamworth Sow in Classes 399 and 400.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor"]

2973 II. (£5.)—ROBERT IBBOTSON, for **Knowle Madeline 15th.** 48710, born Jan. 17, 1916, farrowed Jan. 3 ; *s.* Knowle Macqueen 3rd 18247, *d.* Knowle Madeline 4th 40266 *by* Knowle Professor 15793.

2974 III. (£3.)—ROBERT IBBOTSON. for **Knowle Model 10th**, born Aug. 12, 1917, farrowed Jan. 6 : *s.* Knowle Arundel 21855, *d.* Knowle Modula 4th 48724 *by* Knapp 20651.

2976 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for **Knowle Lady, Manners 2nd.**
H.C.—2975.

Class 400.—*Tamworth Sows, farrowed in* 1919. [6 entries.]

2978 I. (£10, Champion,[1] & Champion.[2])—ROBERT IBBOTSON, Knowle, Warwickshire, for **Knowle Favourite** 63960, born March 10 ; *s.* Knowle Arundel 21855, *d.* Knowle Madeline 2nd 46010 *by* Sunstar 18269.

2977 II. (£5.)—ROBERT IBBOTSON, for **Knowle Fashion**, 63962, born March 10 ; *s.* Knowle Arundel 21855, *d.* Knowle Madeline 2nd 46010 *by* Sunstar 18269.

2980 III. (£3.)—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for **Basildon Lady Manners 2nd** 63886,.born March 29 ; *s.* Basildon Able 25675, *d.* Knowle Lady Manners 2nd 52042 *by* Brodsworth Able 23311.

2981 R. N.—B. I. PHILIP, Botts Green House, Whitacre, Birmingham, for **Whitacre Countess 19th.**
H. C.—2979.

Class 401.—*Three Tamworth Sows, farrowed in* 1920. [2 entries.]

2983 I. (£10.)—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for sow, born Jan. 24, 1920 ; *s.* Whitacre Fireaway 25821, *d.* Basildon Golden Queen 2nd 57506 *by* Brodsworth Able 23311.

2984 II. (£5.)—J. L. & A. RILEY, Putley, Ledbury, Herefordshire, for **Putley Floss 5th, Putley Floss 6th, and Putley Floss 7th,** born Feb. 11 ; *s.* Putley Choice, *d.* Putley Floss 4th 57636 *by* Roxley Argyle 21925.

Berkshires.

Class 402.—*Berkshire Boars, farrowed in or before* 1918. [6 entries.]

2985 I. (£10, Champion,[3] & R. N. for Champion.[4])—H. R. BEETON, Hammonds, Checkendon, Reading, for **Carry On**, born Sept. 2, 1917, bred by J. H. Ismay, Iwerne Minster, Blandford ; *s.* Hurry On 19635, *d.* Iwerne Megan 19637 *by* Iwerne Lad 2nd 18971.

2990 II. (£5.)—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks., for **Murrell Prince** 20332, born June 29, 1917 ; *s.* Minley King 18364, *d.* Murrell Primrose 19580 *by* Whitley Longfellow 18699.

2987 III. (£3.)—JAMES ISMAY, Iwerne Minster, Blandford, for **Highclere Hero** 21401, born April 3, 1918, bred by the Earl of Carnarvon, Highclere Park, Newbury ; *s.* Iwerne Hare Hill 19169, *d.* Highclere Grace 19602 *by* Highclere Postmaster 18444.

2988 R. N.—T. A. JACKSON, Neswick, Bainton, Driffield, for **Neswick Christopher.**
H. C.—2989.

Class 403.—*Berkshire Boars, farrowed in* 1919 *before July* 1.[5] [6 entries.]

2994 I. (£10, & R. N. for Champion.[3])—MRS. JERVOISE, Herriard Park, Basingstoke, for **Herriard Premier 2nd** 21854, born March 8 ; *s.* Pygmalion 19872, *d.* Primula 19619 *by* Velmore Bill 4th 18270.

2995 II. (£5.)—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for **Hurry Onward**, born Jan. 10, bred by James Ismay, Iwerne Minster, Blandford ; *s.* Hurry On 19635, *d.* Iwerne Miss Minster 18975 *by* Hugo 17838.

2996 III. (£3.)—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks., for **Murrell Ringleader** 21904, born April 6 ; *s.* Minley King 18364, *d.* Minley Miriam 18930 *by* Minley Lad 2nd 18171.

2993 R. N.—JAMES ISMAY, Iwerne Minster, Blandford, for **Iwerne Premier.**
H. C.—2992.

Class 404.—*Berkshire Boars, farrowed in* 1919, *on or after July* 1. [11 entries.]

3004 I. (£10.[5])—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks., for **Motcombe Scott** 22259, born July 20, bred by Lord Stalbridge, Motcombe House, Shaftesbury ; *s.* Braishfield Buck 19909, *d.* Minley Norah 18931 *by* Minley Lad 2nd 18171.

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[1] Silver Challenge Cup, value Twenty-five Guineas, given by the National Pig Breeders' Association for the best Tamworth Pig in Classes 396-400.

[2] Champion Gold Medal given by the National Pig Breeders' Association for the best Tamworth Sow in Classes 399 and 400.

[3] Champion Prize of £10 given through the British Berkshire Society for the best Berkshire Boar in Classes 402-405.

[4] Champion Prize of £10 10*s.* given by the British Berkshire Society for the best Berkshire Boar or Sow in Classes 402-408.

[5] Prizes given by the British Berkshire Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

3005 II. (£5.[1])—LORD STALBRIDGE, Motcombe House, Shaftesbury, Dorset, for **Motcombe Buck** 22258, born July 20; *s.* Braishfield Buck 19909, *d.* Minley Norah 18931 *by* Minley Lad 2nd 18171.

3002 III. (£3.[1])—LADY LUGARD, Little Parkhurst, Abinger Common, Dorking, for boar, born Aug. 4; *s.* Pilate 20300, *d.* Baglan Phyllis 20534 *by* Whitley Wiseman 19344.

3000 IV. (£2.)—JAMES ISMAY, Iwerne Minster, Blandford, for **Iwerne Rawlence** 22114, born Sept. 6; *s.* Manor Pioneer 20004, *d.* Iwerne Freda 20750 *by* Hurry On 19635.

2999 R. N.—ARTHUR HISCOCK, Manor France Farm, Blandford, for **Suddon Superfine.**
H. C.—3006. C.—3003.

Class 405.—*Berkshire Boars, farrowed in* 1920. [17 entries.]

3017 I. (£10.)—L. HARRISON & CO., LTD., Coolham, Shipley, Sussex, for boar, born Jan. 2; *s.* Revenge 22315, *d.* Beauty F. 20889 *by* Lord Kirkham 19989.

3010 II. (£5.)—A. H. BISHOP, Home Farm, Thorntonhall, by Glasgow, for **Thorntonhall Chutney**, born Jan. 2; *s.* Manor Guardian 21277, *d.* Charming 6th 21462 *by* Manor Pioneer 20004.

3011 III. (£3.)—JOSEPH CARSON, Manor House King's Sutton, Banbury, for boar, born Jan. 20; *s.* Whitley O.K. 20489, *d.* Basildon Jealousy 20116 *by* Minley King 18364.

3024 IV. (£2.)—LORD STALBRIDGE, Motcombe House, Shaftesbury, Dorset, for boar, born Jan. 8; *s.* Braishfield Buck 19909, *d.* Minley Norah 18931 *by* Minley Lad 2nd 18171.

3008 R. N.—H. R. BEETON, Hammonds, Checkendon, Reading.
H. C.—3020, 3023.

Class 406.—*Berkshire Breeding Sows, farrowed in or before* 1918. [14 entries.]

3034 I. (£10, Champion,[3] & Champion.[2])—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for **Basildon Juvenal** 20717, born Aug. 24, 1917, farrowed Jan. 25; *s.* Goldicote Rob 20126, *d.* Murrell Juvenal 19613 *by* Rob Roy 3rd 17619.

3037 II. (£5.) W. HOWARD PALMER, Stokes Farm, Wokingham, Berks, for **Murrell Lassie** 19975, born May 20, 1917, farrowed Jan. 5; *s.* Minley King 18364, *d.* Murrell Lass 18935 *by* Minley Champion 17122.

3035 III. (£3.)—BERNARD OPPENHEIMER, Sefton Park, Stoke Poges, Bucks., for **Swinton Princess Daphne** 20164, born Feb. 14, 1917, farrowed April 3, bred by Capt. Clive Behrens, Swinton Grange, Malton, Yorks.; *s.* Swinton Peel's Prize 19751, *d.* Langton Daphne 19320 *by* Motcomb Cognac 16605.

3038 IV. (£2.)—W. HOWARD PALMER, for **Murrell Sunshine** 20638, born Jan. 11, 1918, farrowed Jan. 6; *s.* Minley King 18364, *d.* Minley Sunshine 18894 *by* Suddon Jack 17327.

3029 R. N.—THE EARL OF HAREWOOD, Harewood, Leeds, for **Manor Florence.**
H. C.—3033.

Class 407.—*Berkshire Sows, farrowed in* 1919, *before July* 1. [16 entries.]

3048 I. (£10, & R.N. for Champion.[2])—MRS. JERVOISE, Herriard Park, Basingstoke, for **Herriard Primula 2nd** 21855, born March 8; *s.* Pygmalion 19872, *d.* Primula 19619 *by* Velmore Bill 4th 18270.

3047 II. (£5.)—JAMES ISMAY, Iwerne Minster, Blandford, Dorset, for **Iwerne Virtue** 22096, born April 1; *s.* Manor Pioneer 20004, *d.* Virtue 20107, *by* Moundsmere Warrior 17564.

3049 III. (£3.)—MRS. JERVOISE, for **Herriard Primula 3rd** 21856, born March 8; *s.* Pygmalion 19872, *d.* Primula 19619 by Velmore Bill 4th, 18270.

3052 IV. (£2.)—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks., for **Murrell Marie** 21906, born April 6; *s.* Minley King 18364, *d.* Minley Miriam 18930 *by* Minley Lad 2nd 18171.

3050 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading, for **Basildon Princess 3rd.**
H. C.—3043. C.—3051.

Class 408.—*Berkshire Sows, farrowed in* 1919, *on or after July* 1. [14 entries.]

3061 I. £10.)—JAMES ISMAY, Iwerne Minster, Blandford, Dorset, for **Iwerne Maid** 22115 born Sept. 1; *s.* Manor Pioneer 2004, *d.* Iwerne Freda 20750 *by* Hurry On 19635.

3055 II. £5.)—CAPT. H. COLMORE, Antwick Manor, Wantage, Berks., for **Antwick Lady Patience**, born Aug.; *s.* Lord Kirkham 19986, *d.* Charney Noisette *by* Moundsmere Filbert 19084.

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[1] Prizes given by the British Berkshire Society.

[2] Champion Prize of £10 10*s.* given by the British Berkshire Society for the best Berkshire Boar or Sow in Classes 402-408.

[3] Champion Prize of £10 given through the British Berkshire Society for the best Berkshire Sow in Classes 406-408.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

3065 III. (£3.)—W. HOWARD PALMER, Stokes Farm, Wokingham, Berks., for **Murrell Bride**, born July 14; *s.* Minley Cossack 20634, *d.* Murrell Betka 19973 *by* Murrell King 19579.

3066 IV. (£2.)—W HOWARD PALMER, for **Murrell Miramar**, born July 14; *s.* Minley King 18364, *d.* Murrell Miriam 19971 *by* Murrell King 19579.

3059 R. N.—L. HARRISON & CO., LTD, Coolham, Shipley, Sussex, for **Peel Freda.**
H. C.—3064. C.—3062.

Class 409.—*Three Berkshire Sows, farrowed in* 1920. [7 entries.]

3069 I. (£10.)—H. R. BEETON, Hammonds, Checkendon, Reading, for sows born Jan. 2—Jan. 3, bred by R. B. Vincent, Manor Farm, Waterston, Dorchester; *s.* Murrell Premier 21570, *ds.* Compton Maggie, Compton Madge.

3073 II. (£5.)—JAMES ISMAY. Iwerne Minster, Blandford, Dorset, for sows born Jan. 2, bred by R. B. Vincent, Manor Farm, Waterston, Dorchester; *s* Murrell Premier 21570, *d.* Compton Mildred 22272.

3071 III. (£3.)—JOSEPH CARSON, Manor House, King's Sutton, Banbury, for sows born Jan. 20; *s.* Whitely O.K. 20599, *d* Basildon Jealousy 20116 *by* Minley King 18364.

3070 R. N.—A. H. BISHOP, Home Farm, Thorntonhall, by Glasgow, for **Thorntonhall Doris, Thorntonhall Connie,** and **Thorntonhall Cherry.**
Cup.[1]—W. HOWARD PALMER, Stokes Farm Wokingham, Berks.
R. N. for Cup.[1]—JAMES H. ISMAY, Iwerne Minster, Blandford, Dorset.

Large Blacks.

Class 410.—*Large Black Boars, farrowed in or before* 1918. [9 entries.]

3077 I. (£10, & Champion.[2])—HARRY E. BASTARD, Tinten Manor, St. Tudy, Cornwall, for **Trevisquite Padstonian** 7973 born Aug. 8, 1917, bred by Thomas Warne, Trevisquite, St. Mabyn, Cornwall; *s.* Boss of the Valley 3555, *d* Trevisquite Content 8th 13470

3079 II. (£5, & R. N. for Champion.[2])—J. COOPER BLAND, Westwood, Colchester, Essex, for **Bixley Westwood** 10065, born June 9. 1918, bred by Stanley A Stimpson, Bixley, Norwich; *s.* Swardeston That's Him 7347, *d.* Bixley Springtime 1st 28190 *by* Brent Handyman 5423.

3082 III. (£3.)—F. A PERKINS, Marlow. Leintwardine, Herefordshire, for **Bassingbourn Offley Sovereign** 7871, born Feb. 8, 1917, bred by Alfred Playle, Bassingbourn, Cambs. *s.* Royal Sovereign 4593, *d.* Drayton Ellenora *by* Docking Dandy Dick 5135.

3080 R. N.—G. HALL, Langley House, Lanchester, Co. Durham, for **Docking Olando** 10641. born Aug. 12, 1918, bred by H. Groom, Docking, Norfolk.

Class 411.—*Large Black Boars, farrowed in* 1919.[3] [28 entries.]

3098 I. (£10.)—TERAH F. HOOLEY, Dry Drayton, Cambridge, for **Drayton Democrat** 11613, born Jan. 20; *s.* Loughton Marvel 4437, *d.* Drayton Debutante 23294 *by* Bassingbourn Cliff 6337.

3097 II. (£5.)—R. S. HICKS, Wilbraham Temple, Cambs., for **Wilbraham Salary** 10623 born Feb. 17; *s*, Bassingbourn Centaur 6201, *d.* Sudbourn Sadie 6th 17822 *by* Drayton Mars 5289.

3090 III. (£3.)—H. A. BROWN, Grendon, Atherstone, Warwick, for **Grendon None Better** 11093, born April 12; *s.* Swardeston Nulli Secundus 2nd 7143, *d.* Swardeston Lorna Doone 13124 *by* Sudbourne Bixley 3565.

3110 IV. (£2.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for **Sudbourne Angus** 13013, born April 12; *s.* Tartar Yelbourne 8553, *d.* Bentley Matilda 114th 16682 *by* Tey Pride 4235.

3085 V. (£2.)—VISCOUNT ALLENDALE, Bywell Hall, Stocksfield-on-Tyne, for **Bywell Arab** 12259, born Sept 7; *s.* Vahan Arab 2nd 7679, *d.* Sudbourne Bywell 35578 *by* Drayton Mars 5289.

3091 R.N.—S. F. EDGE, Gallops Homestead, Ditchling, Sussex, for **Vahan King Max 1st.**

Class 412.—*Large Black Boars, farrowed in* 1920. [64 entries.]

3117 I. (£10.)—HARRY E. BASTARD, Tinten Manor, St. Tudy, Cornwall, for **Tinten Major,** born Jan. 1; *s.* Cornwood King John 8271, *d.* Tinten Black Bess 21st 17238 *by* Boss of the Valley 3855.

3175 II. (£5.)—MRS. WATSON-KENNEDY, Wiveton Hall Cley, Norfolk, for **Wiveton Colonel** 12497, born Jan. 7; *s*, Bassingbourn Newland Harold 7717, *d.* McHeather Kitty 14752 *by* Sudbourn Champion Lad 4475.

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[1] The "Berkshire" Silver Challenge Cup, value £20, given by the British Berkshire Society for the most points awarded in a combination of entries in Classes 402-409 on the basis of:—Four points for a first prize, three points for a second prize, two points for a third prize, one point for a fourth prize, two points for a Championship, and one point for a Reserve for a Championship.

[2] Champion Prize of £10 given by the Large Black Pig Society for the best Large Black Boar in Classes 410-412.

[3] Prizes given by the Large Black Pig Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

3136 **III.** (£3.)—DR. A. R. KAY, The Manor House, Blakeney, Norfolk, for **Newland Hamlet** 11887, born Jan. 7 : *s.* Bassingbourn Newland Harold 2217, *d.* Newland Doreen 22406 *by* Bassingbourn Morton Rex 1st 6553.

3125 **IV.** (£2.)—S. F. EDGE, Gallops Homestead, Ditchling, Sussex for **Vahan Laird 1st** 12529, born Jan 2 : *s.* Vahan King Melva 9601, *d.* Drayton Bellona 14668 *by* Drayton Disappointment 4573

3150 **V.** (£2.)—F. A. PERKINS, Leintwardine, Herefordshire, for **Offley Cranston**, born Jan. 2 : *s.* Bassingbourn Offley Sovereign 78 7, *d.* Primley Krishna 22860 *by* Cleave Dreadnought 2nd 5917.

3133 **R. N.**—TERAH F. HOOLEY, Dry Drayton, Cambridge.

H. C.—3118, 3119, 3147, 3171, 3172. **C.**—3138, 3141, 3152, 3155, 3173

Class 413.—*Large Black Breeding Sows, farrowed in or before* 1918. [22 entries]

3186 **I.** (£10.)—TERAH F. HOOLEY, Dry Drayton, Cambridge, for **Tinten Black Bess 22nd** 25654, born May 15, 1918, farrowed Jan. 23, bred by H. Bastard, Tinten Manor, St. Tudy, Cornwall : *s.* Tinten Masterpiece 2nd 6381, *d.* Tinten Black Bess 20th 17236.

3195 **II.** (£5.)—WALTER J. WARREN Deacons Farm, Staplegrove, Taunton, for **Kibbear Lady Allies** 17246, born May 6, 1916, farrowed Jan 12 ; *s.* Drayton Disappointment 2nd 4573, *d.* Kibbear Lady Annie 14050 *by* Cornwood Magistrate 4271.

3181 **III.** (£3.)—S. F. EDGE Gallops Homestead, Ditchling Sussex, for **Vahan Queen Melva** 20642 farrowed Jan. 2 : *s.* Vahan Melva 2nd 5691, *d.* Vahan Queen 2nd 15514 *by* Hasketon Lux 19th 3745.

3191 **IV.** (£2.)—ALFRED PLAYLE, Bassingbourn, Cambs., for **Bassingbourn Countess 1st** 20832, born Jan. 26 1918, farrowed Feb. 2 ; *s.* Cleave General 6367, *d.* Bassingbourn Maid 2nd 14472 *by* Bassingbourn Duke 3607.

3187 **V.** (£2.)—MISS KAY-MOUAT, The Firs Farm, Malvern Wells, Worcs., for **McHeather Lassie 1st** 18688 ; *s.* Ratby Morton Lad 6345, *d.* Cornwood Lass 49th 15410 *by* Border Prince 4843.

3194 **R. N.**—THOMAS WARNE, Trevisquite Manor, St. Mabyn Cornwall, for **Trevisquite Levelsides 7th.**

H. C.—3177, 3179, 3182, 3183, 3193.

Class 414.—*Large Black Sows, farrowed in* 1919. [33 entries.]

3210 **I.** (£10, & Champion.[1])—TERAH F. HOOLEY, Dry Drayton, Cambridge, for **Witham Bess 2nd** 27740, born Feb. 21, 1910, bred by P. R. Moore, Witham, Essex ; *s.* Tiptree Roger 5339, *d.* Trevisquite Witham 24700 *by* Boss of the Valley 3855.

3212 **II.** (£5, & **R. N. for Champion.**[1])—DR. A. R. KAY, The Manor House, Blakeney, Norfolk, for **Newland Dandelion** 25240, born Jan. 12 1919 ; *s* Bassingbourn Newland Harold 7717, *d.* Bassingbourn Newland Dora 18862 *by* Royal Sovereign 4593.

3222 **III.** (£3.)—JOHN C OLVER Woodland Valley, Ladock, Cornwall, for **Beauty of the Valley 42nd** 33718, born March 24 ; *s.* Treveglos Marksman 7761, *d.* Beauty of the Valley 12th 15760 *by* Bixley None Such 3095

3220 **IV.** (£2.)—BRIG.-GEN. SIR GODFREY MORGAN, AND MAJOR T. J. LACY, Camp Farm, Stroud, Glos., for **Camp Beauty** 29954 born Jan. 27 ; *s* Docking Sport 8093, *d* Docking Limelight 21804 *by* Lynchmere Headlight 6567.

3204 **V.** (£2.)—S. F. EDGE, Gallops Homestead, Ditchling Sussex, for **Roseland Vahan Royal 1st** 31006, born Jan. 10, 1919, bred by G W. Tolputt, Roseland Farm, Wivelsfield Green, Haywards Heath, Sussex . *s.* Vahan Perfection 6573, *d.* Lewes Nightingale Roseland 17436 *by* Carnwood Don John 4169.

3229 **R. N.**—W. S. WARD, Menna Farm, Grampound Road, Cornwall, for **Menna Queen 33rd.**

H. C.—3206, 3207, 3217, 3218, 3219. **C.**—3203, 3208 3215, 3223 3225.

Class 415.—*Three Large Black Sows, farrowed in* 1920. [23 entries.]

3238 **I.** (£10.)—TERAH F. HOOLEY, Dry Drayton, Cambridge, for sows. born Jan 3 ; *s.* Cornwood Tartar 8851, *d.* Tinten Black Bess 22nd 25654 *by* Tinten Masterpiece 2nd 6381

3232 **II.** (£5.)—HARRY E. BASTARD, Tinten Manor, St. Tudy, Cornwall for sows, born Jan. 1 ; *s.* Cornwood King John 8271, *d.* Tinten Black Bess 21st 17238 *by* Boss of the Valley 3855

3233 **III.** (£3.)—F. P. BROWN, Kingston Farm, Chillerton, I.O.W, for **Kingston Fancy** 37078, **Kingston Fashion** 37080, **Kingston Famous** 37082, born Jan. 14 ; *s.* Trevisquite Surprise 9583, *d.* Drayton Lady Newport 1st 18616 *by* Bassingbourne Cliff 6337.

3245 **IV.** (£2.)—JOHN C. OLVER, Woodland Valley, Ladock, Cornwall, for sows, born Jan. 2 ; *s.* Treveglos Prime, *d.* Beauty of the Valley 20th 19642 *by* Valley Togo 4675.

3254 **V.** (£2.)—JOSEPH WATSON, Sudbourne Hall, Orford, Suffolk, for sows, born Jan. 7 and 8 ; *s* Brent Conqueror 12191, *ds.* Bentley Aurora 22856, Bentley Cynthia 22850, and Bentley Athena 22854 *by* Lord Shingay 6377

3235 **R. N.**—S. F. EDGE, Gallops Homestead, Ditchling, Sussex, for **Vahan Queen Bellona 1st, Vahan Queen Bellona 2nd,** and **Vahan Queen Hominy 1st.**

H. C.—3240, 3242, 3246, 3249, 3253. **C.**—3236, 3250 3252.

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[1] Silver Challenge Cup, value Twenty Guineas, given by the Large Black Pig Society for the best Large Black Sow in Classes 413 and 414.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Lincolnshire Curly-coated.

Class 416.—*Lincolnshire Curly-coated Boars, farrowed in or before* 1918. [1 entry.]

3255 I. (£10, & Champion.[1])—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for Wigtoft Kirkby 41213, born March 3, 1918, bred by Norton Scorer, East Kirkby *s.* Highfield Swell 3863, *d.* East Kirkby Ladylike 1st 10936 *by* Yaxley Donor 3471.

Class 417.—*Lincolnshire Curly-coated Boars, farrowed in* 1919.[2] [2 entries.]

3257 I. (£10, & R. N. for Champion.[1])—GEORGE FREIR, Tolethorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Royal, born Jan. 2; *s.* Deeping East Kirkby, *d.* Deeping Royal 6th *by* Deeping Bold King.

3256 II. (£5.)—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for Wigtoft Surfleet, born Feb. 10; *s.* Wigtoft Kirkby 4213, *d.* Wigtoft Favourite 4th 11378 *by* Midville Knockout 4077.

Class 418.—*Lincolnshire Curly-coated Boars, farrowed in* 1920. [4 entries.]

3260 I. (£10.)—GEORGE FREIR, Tolethorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Bold Boy 1st, born Jan. 3; *s.* Charnwood Dick 7th, *d.* Deeping Marshland 10808 *by* Bold King 2807.

3261 II. (£5.)—GEORGE FREIR, for Deeping Bold Boy 2nd, born Jan. 3; *s.* Charnwood Dick 7th, *d.* Deeping Marshland 10808 *by* Bold King 2807.

3258 III. (£3.)—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for boar, born Jan. 10; *s.* Wigtoft Charnwood, *d.* Wigtoft Mercian 6th 11390 *by* Midville Knockout 4077.

3259 R. N.—F. E. BOWSER.

Class 419.—*Lincolnshire Curly-coated Breeding Sows, farrowed in or before* 1918. [5 entries.]

3265 I. (£10, & Champion.[3])—GERSHOM SIMPSON, Caythorpe, Lowdham, Notts., for Charnwood Jewel 10th 11358, born Jan. 20, 1918, farrowed Jan. 25; *s* Charnwood Friar 9th 3777, *d.* Charnwood Chestnut 7th 10994 *by* Charnwood Hero 2nd 3511.

3263 II. (£5.)—GEORGE FREIR, Tolethorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Marshland 10808, born Aug. 10, 1919, farrowed Jan. 3, bred by Leopold Harvey, Spalding; *s.* Bold King 2807, *d.* Marshland Bobtail 10146 *by* Marshland Duke 2075.

3264 III. (£3.)—GERSHOM SIMPSON, for Charnwood Jewel 5th 10978, born Feb. 2, 1916, farrowed Jan. 4; *s.* Charnwood Friar 2nd 3261, *d.* Charnwood Jewel 2nd 8736 *by* Crowland General 2125.

3262 R. N.—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for Wigtoft Mercian 4th.
H. C.—3266.

Class 420.—*Lincolnshire Curly-coated Sows, farrowed in* 1919. [7 entries.]

3267 I. (£10, & R. N. for Champion.[3])—F. E. BOWSER, Wigtoft, Boston, Lincs. for Wigtoft Sensation 38th, born Feb. 6; *s.* Wigtoft Kirkby 4213, *d.* Wigtoft Sensation 35th 11392 *by* Midville Knockout 4077.

3269 II. (£5.)—GERSHOM SIMPSON, Caythorpe, Lowdham, Notts., for Charnwood Countess 4th, born Feb. 20; *s.* Keal Dick 3801, *d.* Charnwood Duchess 6th 9562 *by* Gibraltar Friar 6th 2697.

3268 III. (£3.)—GEORGE FREIR, Tolethorpe House, Deeping St. Nicholas, Spalding, Lincs., for Deeping Ashleaf, born Jan. 2; *s.* Deeping Earl Kirkby, *d.* Deeping Royal 6th *by* Deeping Bold King.

3270 R. N.—GERSHOM SIMPSON, for Charnwood Countess 5th.
H. C.—3272, 3273.

Class 421.—*Three Lincolnshire Curly-coated Sows, farrowed in* 1920. [2 entries.]

3275 I. (£10.)—GEORGE FREIR, Tolethorpe House, Deeping, St. Nicholas, Spalding, Lincs., for Deeping Lady 1st, 2nd, and 3rd born Jan. 3; *s.* Charnwood Dick, *d.* Deeping Marshland 10808 *by* Bold King 2807.

3274 II. (£5.)—F. E. BOWSER, Casterton House, Wigtoft, Boston, Lincs., for sow, born Jan. 10; *s.* Wigtoft Charnwood, *d.* Wigtoft Mercian 6th 11390 *by* Midville Knockout 4077.

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[1] Champion Prize of £5 5*s.* given by the Lincolnshire Curly-coated Pig Breeders' Association for the best Boar in Classes 416-418.

[2] Prizes given by the Lincolnshire Curly-coated Pig Breeders' Association.

[3] Champion Prize of £5 5*s.* given by the Lincolnshire Curly-coated Pig Breeders' Association for the best Sow in Classes 419 and 420.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Gloucestershire Old Spots.

Class 422.—*Gloucestershire Old Spots Boars, farrowed in or before* 1918. [11 entries.]

3276 **I.** (£10, Champion[1], & Champion.[2])—CAPT. ROBERT B. BRASSEY, Heythrop Park, Chipping Norton, Oxon, for **Winterbourne Blanco 483**, born Feb. 1917, bred by Henry Matthews, Down Farm, Winterbourne, Bristol; *s.* Winterbourne Captain 121, *d.* Winterbourne Blanche 28.

3281 **II.** (£5.)—REGINALD H. HOLE, Clapcote, Grittleton, Chippenham, Wilts, for **Kitesnest Jester 881**, born March 25, 1918, bred by F. H. Rea, Kitesnest, Wotton-under-Edge, Glos; *s.* Coleshill Bradley 240, *d.* Kitesnest Judy 2nd 717 *by* Bradley Pride 152.

3285 **III.** (£3.)—SIR W. G. WATSON, BT., Sulhampstead House, Reading, for **Gilslake President 856**, born Feb. 4, 1918, bred by H. Thomas, Endleigh Court Farm, Spetchley, Worcester; *s.* Woodlands Jumbo 71, *d.* Gilslake Wonder 279 *by* Gilslake Best Boy.

3278 **IV.** (£2.)—JOHN BROMET, Golf Links Farm, Tadcaster, for **Croxton Fickle Boy 803**, born Sept. 26, 1918, bred by J. Gibson Whittles, The Mount, Croxton, Staffs.; *s.* Gilslake Duke 156, *d.* Langstone Fiction 914 *by* Berkeley Masterpiece 197.

3280 **R. N.** PERCY WEBSTER CORY, Manor Farm, Notgrove, Bourton-on-the-Water, Glos, for **Shenstone Boy.**

H. C.—3282.

Class 423.—*Gloucestershire Old Spots Boars, farrowed in* 1919. [17 entries.]

3287 **I.** (£10,[3] & R.N. for Champion.[1])—THE EARL OF BERKELEY, Berkeley Castle, Glos, for **Berkeley Jehu**, born March 1; *s.* Berkeley Noble 445, *d.* Berkeley Jane 5th *by* Woodlands Julian 214.

3293 **II.** (£5.[3])—T. KING, Lower Barnes, Wotton-under-Edge, Glos, for **Ithells Champion 2080**, born April 25, bred by J. Philpot, Charfield, Glos.; *s.* Coleshill Bradley 240, *d.* Barmaid *by* Bradley Pride 152.

3290 **III.** (£3.[3])—SIR F. HERVEY-BATHURST, BT., D.S.O., Somborne Park, King's Somborne, Hants, for **Hodgecombe Hero 2016**, born Oct. 21, bred by A. J. Hulbert, Hodgecombe, Uley, Glos.; *s.* Berkeley Farmer, 960, *d.* Hodgecombe Louie 485 *by* Hodgecombe Masterpiece 35.

3291 **IV.** (£2.)—WILLIAM H. HITCH, Elkstone Manor, Elkstone, Cheltenham, for **Elkstone Major**, born July 27; *s.* Langstone Ideal 661, *d.* Elkstone Mary 3rd 3787 *by* Birdlip Hero 98.

3303 **V.** (£2.)—TOM WELLS, The Wrand Poultry Farm, The Manor, Galphay, Ripon, for **Sporting Major 1651**, born June 9, bred by Captain H. P. Hamilton, Breinton, Hereford; *s.* Gilslake Minor 622, *d.* Sporting Beauty 1912.

3296 **R. N.**—ALFRED G. NYE, Well Place, Penshurst, Kent, for **Priory Fellow.**

Class 424.—*Gloucestershire Old Spots Boars, farrowed in* 1920. [34 entries.]

3326 **I.** (£10.)—JOHN H. THOMAS, Cudleigh Court, Spetchley, Worcester, for **Gilslake Sportsman**, born Jan. 26; *s.* Cleeve Hill Actor 664, *d.* Gilslake Duchess 3rd 2539 *by* Oaklands Hero 414.

3336 **II.** (£5.)—R. WILLIAMSON & W. HOLLAND, Rhyd Broughton Farm, Wrexham, for **Rhyd Duke 11th**, born Jan. 22; *s.* Holwell King 1029, *d.* Gilslake Doreen 1889 *by* Woodlands Jumbo 71.

3331 **III.** (£3.)—SIR W. G. WATSON, BT., Sulhampstead House, Reading, for **Sulhampstead President 1st**, born Jan. 15; *s.* Gilslake President 856, *d.* Basildon Spot 1st 2332 *by* Wold Victor 181.

3335 **IV.** (£2.)—R. WILLIAMSON & W. HOLLAND, for **Rhyd Duke 10th**, born Jan. 22; *s.* Holwell King 1029, *d.* Gilslake Doreen 1889 *by* Woodlands Jumbo 71.

3310 **V.** (£2.)—REGINALD H. HOLE, Clapcote, Grittleton, Chippenham, Wilts, for **Clapcote Lloyd**, born Jan. 19; *s.* Kitesnest Jester 881, *d.* Clapcote Lisinda 813 *by* Clapcote Lad 10.

3333 **R. N.**—W. G. WILLIAMS & SONS, Coleshill Home Farm, Highworth, Wilts, for **Coleshill Hero.**

H. C.—3304, 3305, 3307, 3308, 3313, 3332.

Class 425.—*Gloucestershire Old Spots Breeding Sows, farrowed in or before* 1918. [20 entries.]

3353 **I.** (£10, & R.N. for Champion.[4])—W. G. WILLIAMS & SONS, Coleshill Home Farm, Highworth, Wilts, for **Coleshill Countess 1373**, born July 21, 1918, farrowed Feb. 18; *s.* Kitesnest Recruiter 221, *d.* Portbury Emily 5th 356 *by* Woodlands King.

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[1] Silver Challenge Cup, value £10 10s., given through the Gloucestershire Old Spots Pig Society for the best Boar in Classes 422-424.

[2] Silver Challenge Cup, value Forty Guineas, given through the Gloucestershire Old Spots Pig Society for the best Boar or Sow in Classes 422-426.

[3] Prizes given by the Gloucestershire Old Spots Pig Society.

[4] Silver Challenge Cup, value £10 10s., given through the Gloucestershire Old Spots Pig Society for the best Sow in Classes 425 and 426.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

3338 **II. (£5.)**—R. A. BENNETT & ALGAR HOWARD, Thornbury, Glos., for **Thornbury Beau** 1167, born July 17, 1917, farrowed Feb. 5; *s.* Forthay Prince 104, *d.* Thornbury Beatrice 61.

3346 **III. (£3.)**—JOHN HENRY PERRETT, Hill House, Old Sodbury, Glos., for **Oaklands Mabel 5th** 2076, born May 7, 1918, farrowed Feb 18, bred by H. C. Baker, Oaklands, Almondsbury, Glos.; *s.* Nutgrove Edward 92, *d.* Oaklands Nancy 2nd 654 *by* Woodlands Jumbo 71.

3354 **IV. (£2.)**—W. G. WILLIAMS & SONS, for **Coleshill Duchess** 1379, born Sept. 18, 1917, farrowed March 3, bred by Walter G. Williams; *s.* Kitesnest Recruiter 221, *d.* Portbury Emily 4th 355 *by* Woodlands King 68.

3350 **V. (£2.)**—JOHN H. THOMAS, Cudleigh Court, Spetchley, Worcester, for **Gilslake Duchess 3rd** 2539, born July 21, 1918, farrowed Jan. 26; *s.* Oaklands Hero 114, *d.* Gilslake Duchess 2nd 600 *by* Woodlands Jumbo 71.

3341 **R. N.**—H. L. LYON, Hillam Hall, Monk Fryston, Yorks., for **Hillam Foundation.**

Class 426.—*Gloucestershire Old Spots Sows, farrowed in* 1919.

[21 entries.]

3364 **I. (£10, Champion,[1] & R. N. for Champion.[2])**—CAPT. H. P. HAMILTON, Breinton, Hereford, for **Sporting Perfection** 1631, born June 3, bred by H. Savage, Heath Villa, Breinton; *s* Gilslake Major 622, *d* Sporting Beauty 1912.

3370 **II. (£5.)**—A. R. KIRBY, Fawley, nr. Hereford, for **Ideal** 3851, born April 18; *s.* Gilslake Major 622, *d.* Wye Tulip 1938 *by* Chalfield General 237.

3376 **III. (£3.)**—ALBERT WALTER TROTMAN, Langston Court, Newport, Mon., for **Berkeley Woodlark** 3490, born March 23, bred by the Earl of Berkeley, Berkeley Castle, Glos.; *s* Woodlands Julian 244, *d* Woodlands Mela 309 *by* Woodlands Warrior 78.

3362 **IV. (£2.)**—CAPT. H. P. HAMILTON, for **Hampton Sallie 22nd** 4311, born April 2, bred by F. Hobbs, Maisey Hampton, Glos.; *s.* Cotswold Monarch 314, *d* Hampton Sallie *by* Williamstrip Earl 95.

3371 **V. (£2.)**—THOMAS B. A. LAVER, Oakleaze, Berkeley, Glos., for **Falfield Fuchsia** 4725, born July 12, bred by Russell Thomas, Heneage Court, Falfield, Glos.; *s.* Oakleaze Edwin 597, *d.* Falfield Favourite 2723.

3358 **R. N.**—JOHN R. J. ALPASS, Salter Street, Berkeley, Glos.

H. C.—3366, 3367.

Class 427.—*Three Gloucestershire Old Spots Sows, farrowed in* 1920.

[12 entries.]

3388 **I. (£10.)**—UNIVERSITY OF BRISTOL RESEARCH STATION, Long Ashton, Bristol, for **Ashton Countess, Ashton Crystal, Ashton Charmer,** born Jan. 12; *s.* Daglingworth Prince 1122, *d.* Hobwell Daisy 3088 *by* Coleshill Monarch 464.

3381 **II. (£5.)**—JOHN BROMET, Golf Links Farm, Tadcaster, for **Golf Betty 3rd, Golf Betty 4th, Golf Betty 5th,** born Jan. 18; *s.* Croxton Fickle Boy 803, *d.* Coombe Betty 3rd 2315 *by* Kendalshire Warrior 384.

3382 **III. (£3.)**—CAPT. H. P. HAMILTON, Breinton, Hereford, for **Dinedor Mystic, Dinedor Mist, Dinedor Belinda,** born Jan. 2 and Jan. 23; *s.* Gilslake Major 622, *ds.* Dinedor Mirth 2883 *by* Chalfield General 237 and Lydney Bella 1041 *by* Newnham Beginner 69.

3380 **IV. (£2.)**—HENRY A. BROMET, Highfield, Tadcaster, for **Highfield Beattie 1st, Highfield Beattie 2nd, Highfield Beattie 3rd,** born Jan. 26; *s.* Selby Baron 10th 1224, *d.* Hillaen Beattie 4th, 3268 *by* Kravesmire Roger 621.

3390 **R. N.**—W. G. WILLIAMS & SONS, Coleshill Home Farm, Highworth, Wilts., for **Coleshill Countess 17th, 18th and 19th.**

H. C.—3379, 3383.

Cumberlands.[3]

Class 428.—*Cumberland Boars, farrowed in or before* 1918 [6 entries.]

3396 **I. (£10)**—WM. WHITE, Prestwick Hall, Ponteland, Newcastle-on Tyne, for **Sir Bronto** 737, born March 16, 1918, bred by Wm. Parkin-Moore, Whitehall, Mealsgate, Cumberland; *s.* Lockhills King 46, *d.* Lady Bronte 254, *by* King George 33.

3393 **II. (£5)**—F. S. MARRIOTT, 29, Lightfoot Terrace, Ferryhill Village, Durham, for **Steggo** 1261, born June 10, 1918, bred by W. Parkin-Moore, Whitehall, Mealsgate, Cumberland; *s.* Lockhill's King 46, *d.* Corn Lecks 1006 *by* Hard Cash 26.

3391 **III. (£3)**—TOM CROPPER, 8 John Ashwood Street, Hamer, Rochdale, Lancs., for **Cashier** 673, born Jan 26, 1918, bred by W. Draper, Bradley Hall, Eccleston, Chorley, Lancs.; *s* Hard Cash 26, *d.* Bradley Queen 473.

3392 **R. N.**—WILLIAM JOHNSON, Low Mill, Bootle, Cumberland, for **Kings Ring.**

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[1] Silver Challenge Cup, value £10 10s., given through the Gloucestershire Old Spots Pig Society for the best Sow in Classes 425 and 426.

[2] Silver Challenge Cup, value Forty Guineas, given through the Gloucestershire Old Spots Pig Society for the best Boar or Sow in Classes 422-426.

[3] £25 towards these Prizes were given by the Cumberland Pig Breeders' Association.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 429.—*Cumberland Boars, farrowed in* 1919. [3 entries.]

3397 I. (£10, & Champion.[1])—JAMES C BEATTIE, Aikton House Aikton, Wigton, Cumberland, for **Squire of Aikton** 1263 born March 31 bred by Isaac Gardhouse, Little Orton, Carlisle ; *s.* Laversdale Monarch 43, *d.* Barclose Type 1159 *by* Caleb s Type 12.

3399 II. (£5)—JOHN HENRY TOPPING, Musgrave Hall, Skelton, Penrith, for **Barclose Test Piece** 1178, born March 31, bred by J. J. Wilson, Barclose, Scaleby, Carlisle ; *s.* Hall House Monarch 693, *d* Barclose Ideal 652 *by* Laversdale Monarch 43.

Class 430.—*Cumberland Boars, farrowed in* 1920. [1 entry.]

3400 I. (£10, & R. N. for Champion[1])—J. J. WILSON, Barclose, Scaleby, Carlisle, for **Barclose Copyhead**, born Feb 29 : *s.* Hall House Monarch 693, *d.* Barclose Ideal 652 *by* Laversdale Monarch 43.

Class 431.—*Cumberland Breeding Sows, farrowed in or before* 1918. [3 entries.]

3402 I. (£10, & Champion[2])—MATTHEW STAINTON, Law House, Wigton, Cumberland, for **Agnes** 586 born March 11, 1917, farrowed Feb. 28 ; *s.* The Possible 74, *d.* Longhead Susan 308 *by* Dan

3403 II. (£5.)—JOHN STEEL, M.R.C.V.S. Southley, Wigton, Cumberland, for **Susie 2nd** 837, born June 24, 1917, farrowed April 1, bred by John Dixon, Bolton Wood Lane, Wigton ; *s* Oughterside 57, *d.* Young Susie 471 *by* Riga 62.

Class 432.—*Cumberland Sows, farrowed in* 1919 [4 entries.]

3407 I. (£10, & R. N. for Champion.[2])—JOHN HENRY TOPPIN Musgrave Hall, Skelton, Penrith, Cumberland, for **Skelton Minnie** 1635, born Feb. 4, bred by Joseph Oan, Mansion House, Kirkbride, Cumberland : *s.* Lord Roches 702, *d.* Jenny of the Mansion House 104 *by* Longthwaite Jock.

3404 II. (£5.)—SIR JOHN ANDERSON, BT., Dykehead Farm, Blackford, Carlisle, for **Nancy of Barnett Rigg** 1406, born Jan. 14, bred by J. F. Hall, Barnett Rigg, Thursby, Carlisle : *s.* Waver Lad 433, *d.* Longhead Betty 883 *by* George Again

3406 III. (£3.)—JOHN STEEL, M.R.C.V.S., Southley, Wigton, Cumberland, for **Little Beth** 1611, born July 1 ; *s.* Tristram Shandy 429, *d.* Mrs Culver 1094, *by* Waver Lad 433.

3405 R. N.—TOM CROPPER, 8 John Ashworth Street, Hamar, Rochdale, Lancs, for **Bradley Lovely.**

Class 433.—*Three Cumberland Sows, farrowed in* 1920. [1 entry.]

3408 I. (£10.)—JOHN STEEL, M R.C.V.S, Southley, Wigton, Cumberland, for sows, born Jan. 5 : *s* Tristram Shandy 429, *d* Handsome Nell 600 *by* Caleb s Type 12.

Wessex Saddlebacks.[3]

Class 434.—*Wessex Saddleback Boars, farrowed in or before* 1918. [2 entries.]

3409 I. (£10, Champion,[4] & R. N. for Champion.[5])—T L. MARTIN, Ashe Warren House, Overton, Hants, for **Ashe Plant** 72, born Sept. 1918, bred by V. Hacker, Sherfield English, Romsey, Hants ; *s* Melchet Cooper 2, *d.* Sherfield Sister Susie 40 *by* Melchet Cooper 2.

Class 435.—*Wessex Saddleback Boars farrowed in* 1919. [2 entries.]

3411 I. (£10.)—MISSES F. DONISTHORPE & G. DE MONTGEON, Eastington Hall, Upton-on-Severn, for **Eastington Nimrod** 81, born April 15

3412 II. (£5.)—ERNEST RALLS, 19 Market Place, Romsey, Hants, for **Cattistock Best Born** 87, born April 26 ; *s.* Caer Kingmaker 9, *d* Cattistock Bracelet 55.

Class 436.—*Wessex Saddleback Boars, farrowed in* 1920. [8 entries.]

3415 I. (£10, & R. N for Champion.[4])—W. J. MALDEN, Overton, Hants, for **Oakley Haig** 216, born Jan. 9, bred by V. Hacker, Sherfield English, Hants . *s.* Cattistock Norman 6, *d.* Sherfield Sister Susie 10.

3416 II. (£5.)—T. L MARTIN, Ashe Warren House, Overton, Hants, for **Holbury Leader** 188, born Feb. 18 bred by G. R. Southwell, Holbury Farm, Lockerley, Romsey ; *s.* Norman Hero 27, *d* Holbury Lassie 101.

3418 III. (£3.)—ERNEST RALLS, 19 Market Place, Romsey, Hants, for **Cattistock Deputy Master**, born Jan. 26 ; *d.* Cattistock Ridgway 293.

3419 R. N.—SIR W. G. WATSON, BT , Sulhampstead House, Reading, for **Kennet Duke.**
H. C.—3414. C.—3413.

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[1] Champion Prize of £5 given by the Cumberland Pig Breeders' Association for the best Cumberland Boar in Classes 428–430.

[2] Champion Prize of £5 given by the Cumberland Pig Breeders' Association for the best Cumberland Sow in Classes 431 and 432.

[3] £25 towards these Prizes were given by the Wessex Saddleback Pig Society.

[4] Champion Gold Medal, given by the Wessex Saddleback Pig Society, for the best Wessex Saddleback Boar in Classes 434–436.

[5] Silver Challenge Cup, given by the Wessex Saddleback Pig Society for the best Wessex Saddleback Boar or Sow in Classes 434–438.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 437.—*Wessex Saddleback Breeding Sows, farrowed in or before* 1918. [4 entries.]

3424 **I. (£10, Champion[1], & Champion.[2])**—SIR W. G. WATSON, BART., Sulhampstead House, Reading, for **Kennet Beauty 222**, born 1918, farrowed Jan. 3, bred by James Attrill, Brightstone, Isle of Wight; *s.* Duke of Brightstone 22, *d.* Pride of Brightstone 96 *by* King of Brightstone.

3421 **II. (£5.)**—T. L. MARTIN, Ashe Warren House, Overton, Hants, for **Ashe Mercy 243**, born Sept. 1918, farrowed March 5, bred by V. Hacker, Sherfield English, Romsey, Hants; *s.* Melchet Cooper 2, *d.* Sherfield Sister Susie 40 *by* Melchet Cooper.

3422 **III.**—**(£3.)**—THE RT. HON. SIR ALFRED MOND, BART., Melchet Court, Romsey, Hants, for **Melchet Kathleen 12**, born 1917, farrowed Feb. 26; *s.* Melchet King, *d.* Melchet Winter *by* Melchet King.

Class 438.—*Wessex Saddleback Sows, farrowed in* 1919. [4 entries.]

3425 **I. (£10, & R. N. for Champion.[2])**—MISSES F. DONISTHORPE & G. DE MONTGEON, Eastington Hall, Upton-on-Severn, for **Eastington Darke Ladye, 270**, born April 15, 1919.

3428 **II. (£5.)**—ERNEST BALLS, 19 Market Place, Romsey, Hants, for **Cattistock Ridgway 293**, born March, bred by J. Cross & Son, Ridge Farm, Romsey.

3427 **III. (£3)**—THE RIGHT HON. SIR ALFRED MOND, BART., Melchet Court, Romsey, Hants, for **Norman Nitrate 321**, born March 23, bred by W. M. G. Singer, Norman Court, Salisbury, Wilts; *s.* Norman Hero 27, *d.* Norman Empress 45.

3426 **R. N.**—T. L. MARTIN, Ashe Warren House, Overton, Hants, for **Norman Nell.**

Class 439.—*Three Wessex Saddleback Sows, farrowed in* 1920. [4 entries.]

3430 **I. (£10.)**—W. J. MALDEN, Overton, Hants, for **Halbury Lily 628, Athelstone Princess 711, Oakley Grace 800**, born Jan. 9, bred by V. Hacker, Sherfield English, Romsey, Hants, and J. R. Southwell Halbury Farm, Lockerley *ss.* Norman Hero 27 and Cattistock Norman 6, *ds.* Halbury Lassie 101 and Sherfield Sister Susie 40.

3429 **II. (£5.)**—MISSES F. DONISTHORPE & G. DE MONTGEON, Eastington Hall, Upton-on-Severn, for **Eastington Queen of Hearts, Eastington Ohers, Eastington Valkyrie**, born March 31 and April 1: *s.* Eastington Nimrod 81, *d.* Eastington Gamble 251 and Eastington Amazon 271 *by* Sire Baron of Brightstone III.

3432 **III. (£3.)**—SIR W. G. WATSON BART., Sulhampstead House, Reading, for **Kennet Beauty 1st 620, 2nd 621 and 3rd 622**, born Jan. 3; *s.* Cattistock Nipper 7, *d.* Kennet Beauty 222 *by* Duke of Brightstone 22.

Essex.[3]

Class 440.—*Essex Boars, farrowed in or before* 1918. [4 entries.]

3435 **I. (£10.)**—JOHN STUBBINS, Abbots Hall, Wakering, Essex, for **Pound Chief 57**, born in Aug., 1918, bred by C. W. Raynor, Lowleys, Great Leighs, Essex.

3436 **II. (£5.)**—A. & H. TURNER, Barnston Hall, Dunmow, Essex, for **Barnston Baron**, born Oct. 27, 1918, bred by George Baynes, Broxted Hall, Dunmow, Essex; *s.* Church End Champion.

3433 **III. (£3.)**—JAMES MAYHEW BALLS, Braintree, Essex, for **Laguna Champion 52**, born Aug. 11, 1918, bred by George Baynes, Senr., Broxted, Dunmow, Essex.

3434 **R. N.**—W. & H. MARRIAGE & SONS, Chelmer Mills, Chelmsford, for **Peace Adam.**

Class 441.—*Essex Boars, farrowed in* 1919. [3 entries.]

3439 **I. (£10.)**—EDWARD HERBERT SYKES, Fryerning Grange, Ingatestone, Essex, for **Barnston Claudius**, born April 22, 1919, bred by H. B Turner, Barnston Hall, Dunmow; *s.* Broxted Duke, *d.* Barnston Cassandra.

3438 **II. (£5.)**—LADY ANGELA FORBES, Yew Tree House, Westfield, Sussex, for **Westfield Hero 1136**, born Aug. 28, bred by F. R. Smith, Rutlands, Felstead, Essex; *s.* Pound Chief 57, *d.* Rutlands Primrose 39.

3437 **III. (£3.)**—GEO. F. BODDY, Marsham, Norwich, for **Peace Cabin Boy**, born in July, bred by Chas. Cousins, Stisted, Essex; *s.* Peace Benjamin 8, *d.* Peace Angelina 10.

Class 442.—*Essex Boars, farrowed in* 1920. [6 entries.]

3442 **I. (£10.)**—CHARLES COUSINS, Jenkins, Stisted, Braintree, Essex, for boar, born Jan. 12.

3441 **II. (£5.)**—CHARLES COUSINS, for boar, born Jan. 10.

3445 **III. (£3.)**—A. & H. TURNER, Barnston Hall, Dunmow, Essex, for **Barnston Baron 5th**, born Feb. 8, 1920, ; *s.* Rutlands Pugnacious 443, *d.* Rutlands Beauty 33.

3440 **R. N.**—H. S. ASHTON, Trueloves, Ingatestone, Essex, for **Trueloves Admiral.**

H. C.—3443. **C.**—3444.

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[1] Silver Challenge Cup, given by the Wessex Saddleback Pig Society for the best Wessex Saddleback Boar or Sow in Classes 434–438.

[2] Champion Gold Medal, given by the Wessex Saddleback Pig Society, for the best Wessex Saddleback Sow in Classes 437 and 438.

[3] £25 towards these Prizes were given by the Essex Pig Society.

[Unless otherwise stated, each prize animal named below was "bred by exhibitor."]

Class 443.—*Essex Breeding Sows, farrowed in or before* 1918 [6 entries.]

3440 I. (£10, & R. N. for Champion.[1])—R BROWNING-SMITH, The Brook Great Tey, Essex, for Brook Perfectus, born Jan. 15, 1918, farrowed Jan. 10, bred by C. Neil, Arlsford, Essex.

3451 II. (£5.)—A & H. TURNER, Barnston Hall, Dunmow. Essex, for Rutlands Beauty, born 1912, farrowed Feb 3, bred by F R. Smith, Rutlands, Felstead, Chelmsford.

3450 III. (£3.)—W. G. HARVEY, Kentish Farm, Stisted, Braintree, Essex, for Woolmer Betsey 165, farrowed April 20.

3448 R. N.—A. T. GREENSLADE Little Walden Park, Saffron Walden, Essex, for Walden Duchess.

Class 444.—*Essex Sows, farrowed in* 1919. [9 entries.]

3457 I. £10, & Champion.[1])—W. & H. MARRIAGE & SONS, Chelmer Mills, Chelmsford, for Chelmer Princess 234, born March 20; *s.* Chelmer Boy 620, *d.* Chelmer Crozier's Queen 231 *by* Gomers Admiral 162

3453 II. (£5)—GEO. F. BODDY, Marsham, Norwich, for Tilty Duchess 486, born in Aug., bred by R. Chanin, Dimmont; *d.* Tilty Jenny 137.

3454 III. (£3.)—GEO F. BODDY, for sow, born in Sept., bred by Geo. Baynes, Broxted Essex; *s* Broxted Duke 115, *d.* Broxted Fashion 99 *by* Chief.

3458 R. N.—EDWARD HERBERT SIKES, Fryerning Grange, Ingatestone, Essex, for Robjohn's Beauty.

H. C.—3456. C.—3452, 3459.

Class 445.—*Three Essex Sows, farrowed in* 1920. [3 entries.]

3461 I. (£10.)—CHARLES COUSINS, Jenkins, Stisted, Braintree, Essex, for sows, born Jan. 10.

3463 II. (£5.)—A. & H. TURNER, Barnston Hall, Dunmow, Essex, for Barnston Bianca 2nd, Barnston Bianca 3rd, Barnston Bianca 4th, born Feb. 3, *s.* Rutlands Pugnacious 443, *d.* Rutlands Beauty 33.

3462 III. (£3.)—A. T. GREENSLADE, Little Walden Park, Saffron Walden, Essex, for Walden Princess 110, Walden Pride 1108, Walden Delight 1110, born Jan. 28, bred by George Baynes, Broxted Hall, Essex; *s* Duke 115, *d.* Bashful 113 *by* Chief.

POULTRY.

By "Cock," "Hen," "Gander," and "Goose," are meant birds hatched previous to January 1, 1920; and by "Cockerel" and "Pullet" are meant birds hatched in 1920.

The Prizes in each Class are as follows:—First Prize, 30*s.* Second Prize, 20*s.* Third Prize, 10*s.*

Class 446.—*Silver Grey Dorking Cocks.* [4 entries.]

2 I. & Special[2]—C. AITKENHEAD, Carr House Farm, New Seaham, Co. Durham.
3 II. & 1 III.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.

Class 447.—*Silver Grey Dorking Hens.* [3 entries.]

5 I. & R.N. for Special[2] & 7 II.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.

Class 448.—*Dark Coloured Dorking Cocks.* [8 entries.]

13 I. & Special.[3]—RALPH ALTY, Buckshaw Hall, Euxton, Chorley.
11 II.—GEORGE H. PROCTER, O.B.E., Flass House, Durham
8 III.—C. AITKENHEAD, Carr House Farm, New Seaham, Co. Durham.
9 R. N.—WILLIAM M. WRIGHTSON, West Terrace, Stokesley.
H. C.—14, 15. C.—10.

Class 449.—*Dark Coloured Dorking Hens.* [5 entries.]

17 I. & R. N. for Special[3]—C AITKENHEAD, Carr House Farm, New Seaham.
18 II.—RALPH ALTY, Buckshaw Hall, Euxton, Chorley.
19 III.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.
20 R. N.—MISS MARGARET FAWCETT, Ormesby S.O., Yorks.

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[1] Champion Cup given by the Essex Pig Society for the best Essex Boar or Sow in Classes 440-444.

[2] Special Prize, value £1 1*s*, given by the Dorking Club for the best Silver Grey Dorking.

[3] Special Prize, value £1 1*s*., given by the Dorking Club for the best Dark Coloured Dorking.

Class 450.—*Dorking Cockerels, any colour.* [5 entries.]

22 I. & Special.[1]—RALPH ALTY, Buckshaw Hall, Euxton, Chorley.
25 II. & 21 R. N.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.
24 III.—GEORGE H. PROCTER O.B.E., Flass House, Durham.

Class 451.—*Dorking Pullets, any colour.* [4 entries.]

28 I. & R. N for Special.[1]—C. AITKENHEAD, Carr House Farm, New Seaham.
29 II.—ARTHUR C. MAJOR, Ditton, Langley, Bucks.
27 III.—RALPH ALTY, Buckshaw Hall, Euxton, Chorley.

Class 452.—*Langshan Cocks or Cockerels.* [9 entries.]

33 I.—JAMES STEIZAKER, New House, Stalmine, Poulton-le-Fylde.
31 II.—J. T. GROVES, Elfordleigh, Plympton, South Devon.
34 III.—R. S. TWIGG, Clipshead Farm, Bradbourn, Ashbourne, Derby.
38 R. N.—BEN WILKINSON, Towngate, Hipperholme, near Halifax
H.C.—37. C.—35

Class 453.—*Langshan Hens or Pullets.* [7 entries.]

40 I.—J. W. WALKER, Normanstead, Henley-on-Thames.
41 II. & 45 III.—W. J. PORTER, Post Office, Stalmine, Poulton-le-Fylde.
43 R. N.—S. T. ASHTON, Hall Street, Glossop.

Class 454.—*Croad Langshan Cocks or Cockerels.* [11 entries]

53 I.—E. NEWALL, Gravel, Winsford, Cheshire
48 II. & 51 III.—HERBERT P. MULLENS, The Red House, Ovington, Winchester.
52 R. N.—ALBERT BIRTWISLE, 86 Chester Road, Northwich, Cheshire.
H. C.—47. C.—50.

Class 455.—*Croad Langshan Hens or Pullets.* [10 entries.]

66 I.—H. COLLIER, Rolleston Hall, Gardens
61 II. & 65 R. N.—THOMAS RICHARDS, 17 Church Street, Loanhead, Midlothian.
57 III.—HERBERT P. MULLENS, The Red House, Ovington, Winchester.
H. C.—63. C.—60.

Class 456.—*Brahma Cocks or Cockerels.* [8 entries.]

71 I.—M. EWBANK, Cawton, Hovingham, Malton.
70 II.—S. HOWARD, Bridge Street, Brackley.
74 III. & 72 R.N.—CAPT. G. H. COOKSON, Plas Padarn, Llanbadarn, Aberystwyth.
H. C.—69.

Class 457.—*Brahma Hens or Pullets.* [6 entries.]

78 I.—M. MCKNIGHT, Colville Cottage, 37 Main Street, Dalmellington, Ayrshire.
77 II.—A. BAILEY, Waugh Brow, Mobberley, near Knutsford.
80 III.—R. P. WHEADON, Ilminster, Somerset.
79 R. N.—A. WARWICK, St. Anns Hill Poultry Farm, Carlisle.

Class 458.—*Cochin Cocks or Cockerels.* [5 entries.]

81 I., 83 II., & 85 R. N.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
82 III.—ROBIN JACKSON, Bardykes, Blantyre, Lanarkshire.

Class 459.—*Cochin Hens or Pullets.* [4 entries.]

88 I., 86 II., & 89 III.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.

Class 460.—*Red Sussex Cocks.* [7 entries.]

94A I. & Special.[2]—M. HARRISON Shaw House, Wetheral, Carlisle.
95 II. & 92 R. N.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.
91 III.—MRS M. A. GRANT, Westlands, Horley, Surrey.
H. C.—94. C.—93.

Class 461.—*Red Sussex Hens.* [8 entries.]

102 I., & R. N. for Special,[3] & 97 III.—JAMES RUSSEL, Mapleton, Edenbridge, Kent.
98A II.—M. HARRISON, Shaw House, Wetherall, Carlisle.
99 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.
H. C.—96. C.—100.

Class 462.—*Red Sussex Cockerels.* [6 entries.]

107 I. & 104 II.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.
108 III.—G. W. H. ELLIS, The Manor House, Lingfield, Surrey.
103 R. N.—J. W. WALKER, Normanstead, Henley-on-Thames.
H. C.—105.

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[1] Special Prize, value £1 1*s*., given by the Dorking Club for the best Dorking Chicken hatched in 1920.
[2] Special Prize given by the Sussex Poultry Club for the best Red Sussex.

Class 463.—*Red Sussex Pullets.* [4 entries.]

109 I. & 111 R. N.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.
110 II.—J. W. WALKER, Normanstead Henley-on-Thames
112 III.—G. W. H ELLIS, The Manor House, Lingfield, Surrey.

Class 464.—*Light Sussex Cocks.* [16 entries.]

118 I. & 123 II.—C. & E. STEPHENSON, LTD. Burton House Poultry Farm, near Stafford.
115 III.—CAPT. E. DUCKWORTH, Hooton Poultry Farm, Hooton, Birkenhead.
128 R. N.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.
H. C.—127. C.—116.

Class 465.—*Light Sussex Hens.* [17 entries.]

133 I.—A. J. FALKENSTEIN, Rookhurst Rotherfield, Sussex.
138 II., 144 III. & 131 R. N.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.
H. C.—132, 141. C.—136, 140.

Class 466.—*Light Sussex Cockerels.* [25 entries.]

169 I. & R. N. for Special.[1]—W. H. COOK, LTD., Cook's Poultry Farm, Orpington, Kent.
165 II.—MRS M. A. GRANT, Westlands, Horley, Surrey.
155 III.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.
151 R. N.—R. P. PERCIVAL, Shuttingdon House, Tamworth.
H. C.—153, 160. C.—149, 158.

Class 467.—*Light Sussex Pullets.* [35 entries.]

172 I. & Special[1].—G. W. H. ELLIS, The Manor House, Lingfield, Surrey.
179 II.—R. P. PERCIVAL, Shuttingdon House, Tamworth
191 III.—S. H. PEARLESS, Effingham Farm, Crawley Down, Sussex.
197 R. N.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.
H. C.—171, 186, 196. C.—174, 182, 185.

Class 468.—*Speckled Sussex Cocks.* [17 entries.]

212 I. & Special.[2]—MRS. M. A. GRANT, Westlands, Horley, Surrey
208 II.—JAMES RUSSEL, Mapletown, Edenbridge, Kent
220 III.—FRANCIS & WARDEN, Strawberry Poultry Farm, Edgbaston Park Road Birmingham.
218 R. N.—A. H. BROWNSON, 42 Church Street, Nuneaton, Warwickshire
H. C.—217. C.—206.

Class 469.—*Speckled Sussex Hens.* [23 entries.]

230 I. & R. N. for Special.[2]—JAMES RUSSEL, Mapletown, Edenbridge, Kent.
243 II.—F. E. DERHAM, Gables Poultry Farm, Doveridge, Derbyshire.
240 III.—MRS. M. A. GRANT, Westlands, Horley, Surrey.
223 R. N.—COUNTESS OF DERBY, Cowarth Park, Sunningdale, Berks.
H. C.—225, 236. C.—229, 239.

Class 470.—*Speckled Sussex Cockerels.* [13 entries.]

258 I.—DR. E. S. JACKSON, Poultry Farm, Carnforth.
248 II.—SIR JAMES KNOTT, BT., Close House Home Farm, Wylam-on-Tyne.
252 III.—FRANCIS & WARDEN, Strawberry Poultry Farm, Edgbaston Park Road, Birmingham.
253 R. N.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.
H. C.—247. C.—255.

Class 471.—*Speckled Sussex Pullets.* [17 entries.]

274 I.—DR. E. S. JACKSON, Poultry Farm, Carnforth.
271 II.—W. H. COOK, LTD., Cook's Poultry Farm, Orpington, Kent.
266 III. & 260 R. N.—C. & E. STEPHENSON, LTD., Burton House Poultry Farm, near Stafford.
H. C.—261. C.—270.

Class 472.—*Brown Sussex Cocks.* [5 entries.]

279 I.—J. S HEPBURN, Astley, Nuneaton.
276 II. & 280 R N.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.
278 III.—MRS. M A. GRANT, Westlands, Horley, Surrey.
H. C.—277.

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[1] Special Prize given by the Sussex Poultry Club for the best Light Sussex.
[2] Special Prize given by the Sussex Poultry Club for the best Speckled Sussex.

Class 473.—*Brown Sussex Hens.* [7 entries.]

287 I. & Special[1] & 282 II.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.
281 III.—MRS. E. ADE, Grove Hill, Hellingly, Sussex.
286 R. N.—MRS. M. A. GRANT, Westlands, Horley, Surrey.
H. C.—283. C.—284.

Class 474.—*Brown Sussex Cockerels.* [5 entries.]

288 I. & R. N. for Special[1] & 292 III.—MRS. E. ADE, Grove Hill, Hellingly, Sussex.
291 II.—J. S. HEPBURN, Astley, Nuneaton.
289 R.N.—A. J. FALKENSTEIN, Rookhurst, Rotherfield, Sussex.
H. C.—290.

Class 475.—*Brown Sussex Pullets.* [6 entries.]

297 I. & 293 II.—MRS. E. ADE, Grove Hill, Hellingly, Sussex.
294 III.—A. J. FALKENSTEIN, Rookhurst, Rotherfield, Sussex.
298 R. N.—JAMES RUSSEL, Mapletown, Edenbridge, Kent.
H. C.—295. C.—296.

Class 476.—*Silver Campine Cocks or Cockerels.* [9 entries.]

302 I. & Champion.[2]—D. J. JONES, Red Cottage, Llandilo.
299 II.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.
305 III.—W. E. HUTTON, Linden Avenue, Great Ayton, Yorks.
301 R. N.—F. G. HURT, Alderwasby Hall, Whatstandwell, Matlock
H. C.—304, 307. C.—303.

Class 477.—*Silver Campine Hens or Pullets.* [9 entries.]

315 I.—T. E. HARRISON, 19 Richmond Terrace, Wallbottle, Newburn-on-Tyne.
316 II.—F. G. HURT, Alderwasby Hall, Whatstandwell, Matlock.
309 III.—S. HINCHLIFFE, Willoughbridge Lodge, Market Drayton.
H.C.—310, 311, 312, 314. C.—313.

Class 478.—*Gold Campine Cocks or Cockerels.* [3 entries.]

318 I. & Champion.[3]—G. JACKSON, Huntingdon Road, Earlsdon, Coventry.
317 II. & 319 III.—REV. E. LEWIS JONES, Burton Rectory, Neyland, Pembrokeshire.

Class 479.—*Gold Campine Hens or Pullets.* [1 entry.]

320 I.—REV. E. LEWIS JONES, Burton Rectory, Neyland, Pembrokeshire.

Class 480.—*White Wyandotte Cocks.* [24 entries.]

344 I.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.
342 II.—E. WHITAKER, Carrs Farm, Hebden Bridge.
327 III.—F. RODDA, White Wyandotte Farm, Camborne, Cornwall.
340 R. N.—TOM H. FURNESS, Carlton House, Chesterfield.
H. C.—322, 337, 338, 343. C.—321, 324, 331, 333.

Class 481.—*White Wyandotte Hens.* [19 entries.]

346 I.—CAPTAIN E. DUCKWORTH, Hooton Poultry Farm, Hooton, Birkenhead.
360 II.—E. WHITAKER, Carrs Farm, Hebden Bridge.
361 III.—H. P. DOUGLAS, The Woodlands, Crook S.O., Co. Durham.
359 R. N.—TOM H. FURNESS, Carlton House, Chesterfield.
H. C.—345, 349. C.—355, 356.

Class 482.—*White Wyandotte Cockerels.* [21 entries.]

367 I. & Special.[4]—C. N. GOODE, The Haydens, Bletsoe, Bedford.
364 II. & R. N. for Special.[4]—JOHN WHARTON, Honeycott Farm, Hawes, Yorks.
371 III.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.
383 R. N.—H. P. DOUGLAS, The Woodlands, Crook S.O., Co. Durham.
H. C.—369, 374, 380. C.—372, 373, 375.

Class 483.—*White Wyandotte Pullets.* [25 entries.]

394 I. & Special[5], & 389 II. & R. N. for Special.[5]—JOHN WHARTON, Honeycott Farm, Hawes, Yorks.
393 III.—G. BLUNDELL, Blackleach House, Woodplumpton, near Preston.
404 R. N.—WALTER BRADLEY, Holmlea Poultry Farm, Silsden, Yorks.
H. C.—391, 399, 406. C.—387, 396, 402.

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[1] Special Prize given by the Sussex Poultry Club for the best Brown Sussex.

[2] Silver Medal given by the Campine Club for the best Silver Campine in Classes 476 and 477.

[3] Silver Medal given by the Campine Club for the best Gold Campine in Classes 478 and 479.

[4] Special Prize of 5*s.* given by the White Wyandotte Club, for the best Cockerel in Class 482.

[5] Special Prize of 5*s.* given by the White Wyandotte Club, for the best Pullet in Class 483.

Class 484.—*Black Wyandotte Cocks or Cockerels.* [12 entries.]

416 I. & Special,[1] & 411 III.—ROGER HARGREAVES, Banks Farm, Whalley, Lancs.

412 II.—TOM H. FURNESS, Carlton House, Chesterfield

415 R. N.—T. SIDDONS, Osgathorpe, Loughborough.

H. C.—410, 419 C.—417.

Class 485.—*Black Wyandotte Hens or Pullets.* [6 entries.]

423 I. & R. N. for Special.[1]—FRANCIS & WARDEN, Strawberry Poultry Farm, Edgbaston Park Road, Birmingham.

424 II.—ROGER HARGREAVES, Banks Farm, Whalley, Lancs.

426 III.—T. J. ALTY, Vine Cottage, Pilling, near Garstang.

425 R. N.—TOM ALLSOP, Wakebridge, Crich, Matlock.

Class 486.—*Gold or Silver Laced Wyandotte Cocks or Cockerels.* [5 entries.]

428 I. & 432 R. N.—C. CALVERT, Eastwood Mills, Keighley.

430 II.—TOM H. FURNESS, Carlton House Chesterfield.

429 III.—J. RUNDLE, Churchtown Farm, Lanlivery, Lostwithiel, Cornwall.

Class 487.—*Gold or Silver Laced Wyandotte Hens or Pullets.* [10 entries.]

436 I.—C. CALVERT, Eastwood Mills, Keighley.

435 II.—N. M. AGNEW, Oversley, Morley Wilmslow, Cheshire

437 III.—H. SPENSLEY, Oaks Farm, Menston, *via* Leeds.

434 R. N.—J. RUNDLE, Churchtown Farm, Lanlivery, Lostwithiel, Cornwall

H. C.—439, 441. C.—440.

Class 488.—*Blue Wyandotte Cocks or Cockerels.* [6 entries.]

446 I. & 444 II.—E. BARNES, Mossland Farm, Astley Road Irlam Manchester.

447 III.—W. H. FAIRHURST, Ingle Knott, Moss Lane, Cadishead Manchester.

443 R. N.—MRS. W. HOLDSWORTH, The Central Station Hotel, Newcastle-on-Tyne.

H. C.—445. C.—448

Class 489.—*Blue Wyandotte Hens or Pullets.* [10 entries.]

454 I.—TOM H. FURNESS, Carlton House, Chesterfield.

455 II. & 450 R. N.—E. BARNES, Mossland Farm Astley Road, Irlam, Manchester.

452 III.—I. SPENCER, 30, Park Road, Elland Yorks.

H. C.—451. C.—458.

Class 490.—*Columbian Cocks or Cockerels.* [17 entries.]

463 I. & Champion.[2]—D. BEARD, Lee Vale, Marple Road, Charlesworth, Broadbottom, Manchester.

459 II. & R. N. for Champion.[2]—CAPT. F. L. STONE, Woodcote Poultry Farm, Crockham Hill, Edenbridge

467 III.—N. HAMMETT, Myrtle Poultry Farm, Vicarage Lane Marton.

474 R. N.—L. H. WACE, Kingsland Poultry Farm, Beaminster, Dorset

H. C.—468. C.—471

Class 491.—*Columbian Hens or Pullets.* [15 entries.]

482 I. & Champion.[3]—MISS J. KING, Stidcott Farm, Tytherington, near Falfield.

488 II. & R. N. for Champion.[3]—L. H. WACE, Kingsland Poultry Farm Beaminster, Dorset.

489 III.—G. TOMPKIN, Marden, Kent.

478 R. N.—N. HAMMETT, Myrtle Poultry Farm, Vicarage Lane, Marton.

H. C.—479. C.—484.

Class 492.—*Wyandotte Cocks or Cockerels, any other variety.* [10 entries.]

492 I.—W. LEAR, Howard Cottage, Wetheral, near Carlisle

493 II. & 496 III.—J. G. MORTEN, Pentrich, Derby.

498 R. N.—MISS WOODMASS, Howard House, Gilsland, Carlisle.

H. C.—497. C.—495.

Class 493.—*Wyandotte Hens or Pullets, any other variety.* [6 entries.]

500 I.—J. A. BOARDLEY, Clyne Road, Lancaster

502 II.—J. HODGE, 174 Cotswold Road, St. John's Lane, Bristol.

501 III.—W. LEAR, Howard Cottage, Wetheral, near Carlisle.

505 R. N.—MISS WOODMASS, Howard House, Gilsland, Carlisle.

H. C.—504

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[1] Special Prize of 10s. 6d given by the Black Wyandotte Club, for the best Black Wyandotte in Classes 484-485.

[2] Silver Spoon given by the Columbian Wyandotte Club, for the best Cock or Cockerel in Class 490.

[3] Silver Spoon given by the Columbian Wyandotte Club, for the best Hen or Pullet in Class 491.

Class 494.—*Buff Orpington Cock.* [6 entries.]

509 I. & Champion.[1]—A. DODD. The Grove, Shavington, Crewe.
510 II.—GEORGE H PROCTER, O B.E., Flass House, Durham
508 III.—F. M. ROGERS, Wanbarrow Poultry Farm, Hurstpierpoint, Hassocks, Sussex.
511 R. N.—W. H. COOK, LTD., Cook's Poultry Farm, Orpington, Kent.
H. C.—506. C.—507.

Class 495.—*Buff Orpington Hens.* [7 entries.]

518 I.—W. T. JEFFERIES, 105 Clouds Hill Road, St. George, Bristol.
512 II.—ROBERT L. MOND, Combe Bank, Sevenoaks, Kent.
516 III.—MAJOR J. A. MORRISON, D.S O., Basildon Park, Reading.
513 R.N.—GEORGE H. PROCTER, O.B E., Flass House, Durham

Class 496.—*Buff Orpington Cockerels.* [10 entries.]

524 I. & 527 II.—ROBERT L. MOND, Combe Bank, Sevenoaks, Kent
521 III. & 525 R.N.—F. M. ROGERS, Wanbarrow Poultry Farm, Hurstpierpoint, Hassocks.
H. C.—526. C.—522.

Class 497.—*Buff Orpington Pullets.* [12 entries.]

530 I. & R.N. for Champion[1], & 532 III.—F. M. ROGERS, Wanbarrow Poultry Farm, Hurstpierpoint, Hassocks, Sussex.
538 II.—WHITE & DAVIDSON, Stoford Poultry Farm, Wellington, Somerset.
529 R.N.—W. M. BELL, St. Leonards Poultry Farm, Ringwood, Hants.
H. C.—536. C.—537.

Class 498.—*White Orpington Cocks.* [10 entries.]

548 I. & R. N. for Special.[2]—TOM H. FURNESS, Carlton House, Chesterfield.
541 II.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
549 III. & 550 R.N.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.
H. C.—545.

Class 499.—*White Orpington Hens.* [8 entries.]

551 I. & Special.[2]—GEORGE H. PROCTER, O B E., Flass House, Durham.
555 II.—ROBERT L. MOND, Combe Bank, Sevenoaks, Kent.
553 III.—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.
558 R. N.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.
H. C.—556. C.—552.

Class 500.—*White Orpington Cockerels.* [7 entries.]

561 I. & Special.[3]—W. M BELL, St. Leonard's Poultry Farm, Ringwood, Hants.
559 II.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
565 III.—MRS. O. H. LORD, Lilybrook Poultry Farm, Charlton Kings, Cheltenham.
562 R.N.—J. WARREN, Cross Tree, Marnhull, Dorset.
H. C.—564. C.—560.

Class 501.—*White Orpington Pullets.* [5 entries.]

570 I. & 566 III.—J. WARREN, Cross Tree, Marnhull, Dorset.
567 II.—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.
568 R. N.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
H. C.—569.

Class 502.—*Black Orpington Cocks.* [17 entries.]

580 I.—C. E. WOODWARD, Clipstone Colliery, Edwinstowe, Newark.
572 II.—N. M. AGNEW, Oversley, Morley, Wilmslow, Cheshire.
585 III.—DR. E. S. JACKSON, Poultry Farm, Carnforth
581 R. N.—W. J. CHILD, Fernbank, St. Ives, Ringwood, Hants.
H. C.—578. C.—575.

Class 503.—*Black Orpington Hens.* [11 entries.]

590 I.—F. SWINDELLS, Crossley Stud Farm, Buglawton, Cheshire.
593 II.—C. E. WOODWARD, Clipstone Colliery, Edwinstowe, Newark.
587 III.—D. REID, Firthview, Portgordon, Banffshire.
589 R. N.—N. M. AGNEW, Oversley, Morley, Wilmslow, Cheshire.
H. C.—595. C.—594.

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[1] Piece of Plate, value £3 3s., given by the Buff Orpington Club for the best Buff Orpington in Classes 494-497.

[2] Special Prize given by the White Orpington Club for the best Cock or Hen in Classes 498 and 499.

[3] Special Prize given by the White Orpington Club for the best Cockerel or Pullet in Classes 500 and 501.

Class 504.—*Black Orpington Cockerels.* [7 entries.]

604 I.—DR. E. S. JACKSON, Poultry Farm, Carnforth
599 II.—S. R HOOPER, Cuddra House, Par Station, Cornwall.
601 III.—D. REID, Firthview, Portgordon, Banffshire
600 R. N.—W. M. BELL St. Leonard's Poultry Farm, Ringwood, Hants.

Class 505.—*Black Orpington Pullets.* [6 entries.]

606 I. & 609 R. N.—D. REID, Firthview, Portgordon Banffshire.
607 II.—W. M. BELL, St. Leonard's Poultry Farm, Ringwood, Hants.
605 III.—W. H. COOK, LTD., Cooks Poultry Farm, Orpington, Kent.
H. C.—610.

Class 506.—*Blue Orpington Cocks or Cockerels.* [9 entries.]

614 I.—MRS. A. LATHAM, Model Poultry Farm, Frimley Green, Surrey.
617 II., 613 III., & 615 R. N.—ROBERT L. MOND, Combe Bank, Sevenoaks.
H. C.—618. C.—611.

Class 507.—*Blue Orpington Hens or Pullets.* [10 entries.]

620 I.—ROBERT L. MOND, Combe Bank, Sevenoaks.
622 II.—MRS. A. LATHAM, Model Poultry Farm, Frimley Green, Surrey.
625 III.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.
H. C.—626. C.—621.

Class 508.—*British Rhode Island Red Single Comb or Rose Comb Cocks.* [30 entries.]

636 I. & Special.[1]—A. J. JONES, Oldbury Grange, Bridgnorth.
647 II.—W. R ABBEY, Croft Farm, Hessay, York.
641 III.—J. TRUMAN, The Red Farm, Woodhouse, Sheffield.
640 R. N.—MISS K. S. MASON, Timbersbrook House, Congleton.
H. C.—643, 652. C.—633.

Class 509.—*British Rhode Island Red Single Comb or Rose Comb Hens.* [21 entries.]

677 I. & R. N. for Special.[1]—W. R. SMITH, Copley House, Pattingham, Wolverhampton.
675 II.—A. T. BROCKLEHURST, 30 Meadowcroft Road, Palmers Green, London, N.
680 III.—MRS. A. J. MOORE, Eight Oaks, Chelford Road, Knutsford, Cheshire.
665 R. N.—MISS K. S. MASON, Timbersbrook House, Congleton
H. C.—660, 669, 676. C.—667, 674.

Class 510.—*British Rhode Island Red Single Comb Cockerels.* [20 entries.]

699 I. & Special.[2]—N. A. AXE, Hand Dale Farm, Hartington, Buxton.
682 II.—W. R. ABBEY, Croft Farm, Hessay, York.
693 III.—W. G. STEBBINGS, Salwick, Preston.
683 R. N.—A. J. JONES, Oldbury Grange, Bridgnorth.
H. C.—691.

Class 511.—*British Rhode Island Red Single Comb Pullets.* [34 entries.]

722 I. & Special.[3]—T HODGSON & SON, Redsholme Farm, Cotherstone.
723 II.—DYSON & SON, Holly Bank, Brockholes, near Huddersfield.
729 III.—MRS. A. J. MOORE, Eight Oaks, Chelford Road, Knutsford, Cheshire.
708 R. N.—MISS K. S. MASON, Timbersbrook House, Congleton.
H. C.—710, 716. C.—704.

Class 512.—*British Rhode Island Red Rose Comb Cockerels.* [8 entries.]

740 I. & R. N. for Special.[2]—A. J. SPIRES, 129 Besent Road, Luton.
735 II. & 739 III.—GEORGE SCOTT, Windmill Poultry Farm, Pudsey, Yorks.

Class 513.—*British Rhode Island Red Rose Comb Pullets.* [8 entries.]

749 I. & R. N. for Special.[3]—MISS F. CHAMPION, Heather Hall, Leicester.
747 II. & 750 R. N.—GEORGE SCOTT, Windmill Poultry Farm, Pudsey, Yorks.
746 III.—TOM A. SCOTT & CO., The Trenches, Slough.

Class 514.—*Russian Orloff Cocks or Cockerels.* [5 entries.]

754 I. & 751 II.—MRS. CHRISTINE COLBECK, Boyle Hall, near Wakefield.

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[1] Special Prize given by the British Rhode Island Red Club for the best Cock or Hen in Classes 508 and 509.

[2] Special Prize given by the British Rhode Island Red Club for the best Cockerel in Classes 510 and 512.

[3] Special Prize given by the British Rhode Island Red Club for the best Pullet in Classes 511 and 513.

Class 515.—*Russian Orloff Hens or Pullets.* [4 entries.]

756 I. & 759 III.—MRS. CHRISTINE COLBECK, Boyle Hall, near Wakefield.
758 II.—MRS. A. SHERSTON, Otley Hall, Ipswich.

Class 516.—*Old English Game Black-Red Cocks or Cockerels.* [21 entries.]

760 I.—W. & J. H. HEYS, Leftwich, Heyes, Davenham, Northwich.
767 II.—J. OLIVER, Threepwood Farm, Haydon Bridge.
762 III.—H. STALKER, The Beek, Brampton Junction, Carlisle.
765 R. N.—ARTHUR BROWN, Heighington co. Durham.
H. C.—761, 770, 772, 778. C.—764, 775.

Class 517.—*Old English Game Clay or Wheaten Hens or Pullets.* [17 entries.]

795 I.—MRS. T. T. ROBINSON, Grey Coats Inn, Baggrow, Cumberland.
781 II.—TOM WOODCOCK, Burton Fen, Lincoln.
786 III.—ARTHUR BROWN, Heighington, Co. Durham.
792 R.N.—JOHN WATSON, Eden Mount, Kendal.
H. C.—782, 787, 788, 789, 794. C.—783, 784, 785, 796.

Class 518.—*Old English Game Cocks or Cockerels, any other colour.* [24 entries.]

801 I.—ARTHUR BROWN, Heighington, Co. Durham.
798 II.—W TELFORD, Breconside, Brampton Junction, Carlisle.
812 III.—C. WOOF, Talkin, Brampton Junction, Carlisle.
821 R. N.—J. T. DODD, Riccarton, Newcastleton.
H. C.—804, 806, 815, 818, 819. C.—802, 803, 807, 810.

Class 519.—*Old English Game Hens or Pullets, any other colour.* [15 entries.]

836 I. & 834 III.—JOHN WATSON, Eden Mount, Kendal.
831 II.—MRS T. T ROBINSON, Grey Coats Inn, Baggrow, Cumberland.
826 R. N.—ARTHUR BROWN, Heighington, Co. Durham.
H. C.—822, 823, 827, 832, 833. C.—828, 829, 830, 835.

Class 520.—*Indian Game Cocks or Cockerels.* [7 entries.]

843 I. & 837 III.—ALFRED BIRCH, Edge Farm, Sefton, *via* Seaforth.
838 II.—E. C. TUCKER, Bowden Hall Farm, Upton St. Leonards, Gloucester.
840 R. N.—E. SAUNDERS, 8 Camilla Street, Gateshead-on-Tyne.
H. C.—833, 842, 843a.

Class 521.—*Indian Game Hens or Pullets.* [10 entries.]

844 I.—W. & J. H. HEYS, Leftwich, Heyes, Davenham, Northwich.
853 II. & 851 III.—ALFRED BIRCH, Edge Farm, Sefton, *via* Seaforth.
846 R. N.—E. C. TUCKER, Bowden Hall Farm, Upton St. Leonards, Gloucester.
H. C.—845, 848, 849, 850.

Class 522.—*Modern Game Cocks or Cockerels, any colour.* [5 entries.]

858 I.—C. SNEDDON, Kirkham, Lancs.
854 II.—E. H PORTER, 35 Browney Lane, Browney, Co. Durham.
855 III.—J. GREENFIELD & SON, White Mill, Abergwili, Carmarthen.
857 R. N.—CAPTAIN T. M. WHITTAKER, Hendre, Penrhyndeudraeth, North Wales.

Class 523.—*Modern Game Hens or Pullets, any colour.* [3 entries.]

861 I.—CAPTAIN T. M. WHITTAKER, Hendre, Penrhyndeudraeth, North Wales.
860 II.—H. HOWARD, Greycote House, Harrowden, Beds.

Class 524.—*Black Sumatra Game Cocks or Cockerels.* [3 entries.]

862 I. & 864 III.—W. T. W. ROYDEN, Flegg Burgh, Norfolk.
863 II.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.

Class 525.—*Black Sumatra Game Hens or Pullets.* [4 entries.]

866 I. & 868 III.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.
865 II. & 867 R. N.—W. T. E. ROYDEN, Flegg Burgh, Norfolk.

Class 526.—*Minorca Cocks or Cockerels.* [10 entries.]

876 I. & 878 R. N.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.
873 II.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.
874 III.—FURSLAND BROS., Bridgwater, Somerset.
H.C.—870, 875.

Class 527.—*Minorca Hens or Pullets.* [15 entries.]

891 I. & 893 R. N.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.
887 II. & 889 III.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.
H.C.—882, 888, 892.

Class 528.—*White Leghorn Cocks or Cockerels.* [13 entries.]

895 I.—H. WHEATLEY, Spalding Mills, Bubwith, Selby
902 II. & 905 III.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.
900 R. N.—H. P. DOUGLAS, The Woodlands, Crook, S O., Co. Durham.
H.C.—899, 901

Class 529.—*White Leghorn Hens or Pullets.* [22 entries.]

923 I.—WALTER BRADLEY Homelea Poultry Farm, Silsden, Yorks.
912 II.—F. SKEY, 12 Maesmelyn Street, Groes Wen, Taibach, Port Talbot.
921 III.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.
928 R. N.—FRANCIS & WARDEN, Strawberry Poultry Farm, Edgbaston Park Road Birmingham.
H.C.—915, 916, 918.

Class 530.—*Brown Leghorn Cocks or Cockerels.* [10 entries.]

930 I., 934 II., & 937 R. N.—JOHN JONES, Poultry Farm, Crymmych.
933 III.—WALTER BRADLEY, Homelea Poultry Farm, Silsden, Yorks.
H. C.—938.

Class 531.—*Brown Leghorn Hens or Pullets.* [14 entries.]

944 I.—E. DENYER, 93 Walton Road, East Molesey, Surrey.
943 II.—R MCMILLAN, Forty Acre Poultry Farm, Witch Road, Kilmarnock.
945 III.—J. W PEACOCK, Holm Hill, Chester Moor, Chester-le-Street.
942 R. N.—FRANCIS & WARDEN, Strawberry Poultry Farm, Edgbaston Park Road Birmingham
H. C.—946, 951, 952

Class 532.—*Black Leghorn Cocks or Cockerels.* [8 entries.]

953 I.—WALTER HURST, South Terrace, Glossop.
956 II.—C. G BLACKADDER, Angel Cottage, Castle Douglas.
960 III.—W. WOODMASS, Howard House, Gilsland, Carlisle.
955 R. N.—W. SOUTHWELL, 6 Tillotson Street, Silsden, Yorks.
H. C.—954. C.—959.

Class 533.—*Black Leghorn Hens or Pullets.* [7 entries.]

964 I.—JOHN BOWER, "The Bungalow," Peak Forest.
963 II.—WALTER HURST, South Terrace, Glossop.
965 III.—H. S. KING, Gallow House, Otley, Yorks.
967 R. N.—E. WHITAKER, Carrs Farm, Hebden Bridge.
H. C.—961, 962.

Class, 534.—*Blue Leghorn Cocks or Cockerels.* [4 entries.]

970 I. & Special[1] & 968 R. N.—F. MITTON, 23 Bolton Road, Edgworth, West Bolton.
971 II.—S. T. ASHTON, 37 Hall Street, Glossop.
969 III.—C. N. ALEXANDER, Stockwell House, Knaresborough.

Class 535.—*Blue Leghorn Hens or Pullets.* [8 entries.]

975 I. & R. N. for Special.[1]—S. T. ASHTON, 37 Hall Street, Glossop.
976 II. & 973 III.—C. N. ALEXANDER, Stockwell House, Knaresborough.
974 R.N.—F. MITTON 23 Bolton Road, Edgworth, West Bolton.

Class 536.—*Leghorn Cocks or Cockerels, any other colour.* [6 entries.]

980 I. & 981 II.—R HELME, Thurnham, near Lancaster.
985 III.—F. E DERHAM, Gables Poultry Farm, Doveridge, Derbyshire.

Class 537.—*Leghorn Hens or Pullets, any other colour.* [5 entries.]

986 I.—A. R. FISH, Holme Mead, Hutton, Preston.
990 II.—F. G. EDWARDS, 2 West Street, Pembroke, South Wales.
987 III.—L W. ADAMS, Red Barns Farm, Fareham, Hants.
988 R.N.—R. HELME, Thurnham, near Lancaster.

Class 538.—*Sicilian Buttercup Cocks or Cockerels.* [14 entries.]

998 I.—MRS. C. COLBECK, Boyle Hall, near Wakefield.
1002 II.—R. TERROT, Wispington House, Cookham, Berks,
1004 III.—W. E. HUTTON, Linden Avenue, Great Ayton, Yorks.
1000 R. N.—TOM A. SCOTT & CO, The Trenches, Slough.
H. C.—991. C.—997.

Class 539.—*Sicilian Buttercup Hens or Pullets.* [12 entries.]

1007 I. & 1010 III.—MRS. C. COLBECK, Boyle Hall, near Wakefield.
1005 II.—J. PARNABY, Wragby, near Wakefield.
1013 R. N.—P A. BALL, Lower Poultry Farm, Doveridge, Derbyshire.
H. C.—1008. C.—1011.

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[1] Special Prize given by the Blue Leghorn Club for the best Blue Leghorn in Classes 534 and 535.

Class 540.—*Barred Plymouth Rock Cocks.* [12 entries.]

1020 I. & Special.[1]—MRS. E. J. WROUGHTON, Lynbrook Farm, Northallerton.
1017 II. & 1027 III.—DR. E. S. JACKSON, Poultry Farm, Carnforth.
1024 R. N.—J. HARRIS, 1 Laurel Cottages, St. Martins, Oswestry.
H. C.—1019, 1023, 1026. C.—1018, 1026.

Class 541.—*Barred Plymouth Rock Hens.* [7 entries.]

1028 I. & R. N. for Special[1] & 1032 II.—DR. E. S JACKSON, Poultry Farm, Carnforth.
1031 III.—MRS DREW, Plas Wilmot, Oswestry, Salop.
1030 R. N.—S. LAKE, Hayesden, Tonbridge, Kent.
C.—1029.

Class 542.—*Barred Plymouth Rock Cockerels.* [11 entries.]

1045 I., Special[2], Special[5] & 1037 II.—DR. E. S. JACKSON, Poultry Farm, Carnforth.
1041 III.—W. R. WILLIAMS, Carnforth, Lancs
1035 R. N.—R GARLICK, Kirkby Lonsdale, Westmoreland.
H. C.—1036, 1038.

Class 543.—*Barred Plymouth Rock Pullets.* [14 entries.]

1049 I., R. N. for Specials[2] & [5] & 1059 II.—DR. E S JACKSON, Carnforth.
1046 III.—R. GARLICK, Kirkby Lonsdale, Westmorland.
1052 R. N.—G. A. JACKSON, Summordell, Caton, Lancaster.
H. C.—1048, 1050, 1057. C.—1047.

Class 544.—*Buff Plymouth Rock Cocks or Cockerels.* [11 entries.]

1060 I., Special[3], Special[6] & 1067 II.—DR E. S. JACKSON, Poultry Farm, Carnforth.
1063 III.—E. STEPHENS, Tymaen Poultry Farm, Cwmavon, Port Talbot.
1064 R. N.—W. D. MAYCOOK, 307 St. Benedicts Road, Small Heath.
H. C.—1061, 1066. C.—1068.

Class 545.—*Buff Plymouth Rock Hens or Pullets.* [6 entries.]

1071 I., R. N. for Specials[3] & [6] & 1074 R. N.—DR E. S. JACKSON, Carnforth.
1075 II.—H. SPENSLEY, Oaks Farm, Menston, viâ Leeds.
1073 III.—H. R. ROTHON, Joseph Villa, Chapel Road, Tiptree, Essex.

Class 546.—*Plymouth Rock Cocks or Cockerels, any other colour.* [7 entries.]

1079 I. & Special[4] 1082 & R. N.—H. WHEATLEY, Spalding Mills, Bubwith Selby.
1077 II.—CAPT. E. DUCKWORTH, Hooton Poultry Farm, Hooton, Birkenhead.
1081 III.—DR. E. S. JACKSON, Poultry Farm, Carnforth.
H. C.—1080, 1083.

Class 547.—*Plymouth Rock Hens or Pullets, any other colour.* [6 entries.]

1089 I. & R. N. for Special.[4]—CAPT. E. DUCKWORTH, Hooton Poultry Farm, Hooton.
1084 II. & 1088 III.—H. WHEATLEY, Spalding Mills, Bubwith, Selby.
1086 R. N.—A. C. MARFIT, Orchard Rookeries, Pickering, Yorks.

Class 548.—*Scots Dumpy Cocks or Cockerels.* [4 entries.]

1091 I. & Special[7] & 1093 II.—ARTHUR J. MAJOR, Ditton, Langley, Bucks.
1090 III. & 1092 R. N.—J. E. KERR, Harviestoun Castle, Dollar.

Class 549.—*Scots Dumpy Hens or Pullets.* [4 entries.]

1095 I., R. N. for Special,[7] & 1097 II.—ARTHUR J. MAJOR, Ditton, Langley, Bucks.
1094 III., & 1096 R. N.—J. E. KERR, Harviestoun Castle, Dollar.

Class 550.—*Ancona Cocks or Cockerels.* [14 entries.]

1108 I.—E. WHITAKER, Carrs Farm, Hebden Bridge.
1101 II.—T. WILLIAMS, Church House, Manordilo, South Wales.
1103 III.—JOHN JONES, Pentricelyn, 26 Woods Row, Carmarthen.
1105 R. N.—R. W. TUNSTALL, Aysgarth, Yorks.
H. C. 1098, 1099, 1106, 1110. C.—1100.

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[1] Special Prize of 10*s.* given by the Plymouth Rock Society for the best Barred Cock or Hen in Classes 540 and 541.

[2] Special Prize of 10*s.* given by the Plymouth Rock Society for the best Barred Cockerel or Pullet in Classes 542 and 543.

[3] Special Prize of 10*s.* given by the Plymouth Rock Society for the best Buff in Classes 544 and 545.

[4] Special Prize of 10*s.* given by the Plymouth Rock Society for the best any other colour in Classes 546 and 547.

[5] Special Prize given by the Barred Plymouth Rock Club for the best Barred in in Classes 540-543.

[6] Special Prize given by the Buff Plymouth Rock Club for the best Buff in Classes 544 and 545.

[7] Special Prize of 10*s.* 6*d.* given by the Scots Dumpy Club for the best Scots Dumpy in Classes 548 and 549.

Class 551.—*Ancona Hens or Pullets.* [19 entries.]

1114 I.—T. B. ISHERWOOD, Clarence Poultry Farm, Helmshore, Manchester.
1120 II.—T. WILLIAMS, Church House, Manordilo, South Wales.
1118 III.—H. HARTLEY, Seghole Farm, Trawden, Calne, Lancs.
1112 R. N.—J. H. FULLER, Houghton Lane Farm, Flaxmoss, Helmshore, Lancs.
H. C.—1113, 1116, 1117, 1119, 1121, 1122, 1125, 1129, 1130. C.—1124.

Class 552.—*Yokohama Cocks or Cockerels.* [3 entries.]

1131 I., & Silver Medal.[1]—MRS. L. C. PRIDEAUX, Lindfield, Haywards Heath, Sussex.
1133 II.—R. SCOTT MILLER, Clydeneuk, Uddingston, Glasgow.
1132 III.—ROBERT L. MOND, Combe Bank, Sevenoaks.

Class 553.—*Yokohama Hens or Pullets.* [4 entries.]

1134 I.—MRS. L. C. PRIDEAUX, Lindfield, Haywards Heath, Sussex.
1136 II.—ROBERT L. MOND, Combe Bank, Sevenoaks.

Class 554.—*Cocks or Cockerels, any other distinct variety.* [13 entries.]

1148 I.—H. MCFARLAND, Holbeck Hill, Wolsingham, Co. Durham.
1139 II.—HARRY FORTUNE, Banklands, Silsden, near Keighley.
1146 III.—C. J. SECKER, Market Hill Works, Dereham.
1150 R. N.—R. P. WHEADON, Ilminster, Somerset.
H. C.—1140, 1141, 1144, 1147, 1149.

Class 555.—*Hens or Pullets, any other distinct variety.* [17 entries.]

1161 I.—TOM H. FURNESS, Carlton House, Chesterfield.
1159 II.—MRS. J. EDWARDS, Railway Hotel, Llandilo, South Wales.
1151 III.—HARRY FORTUNE, Banklands, Silsden, near Keighley.
1166 R. N.—W. PICKERING, 19 East Gate, Pickering, Yorks.
H. C.—1152, 1155, 1156, 1158, 1160, 1162, 1163, 1164, 1167.

Ducks.

Class 556.—*Aylesbury Drakes or Ducks, bred prior to* 1920. [4 entries.]

1170 I., & 1168 II.—J. HUNTLEY & SON, Hirsel Poultry Farm, Coldstream.
1169 III., & 1171 R.N.—J. Y. WHEATLEY, Saxton, Tadcaster.

Class 557.—*Aylesbury Drakes or Ducks, bred in* 1920. [7 entries.]

1175 I. & 1172 III.—J. HUNTLEY & SON, Hirsel Poultry Farm, Coldstream.
1173 II.—J. LONGSON & SONS, Buxton Road, Chapel-en-le-Frith, Derbyshire.
1174 R. N.—J. Y. WHEATLEY, Saxton, Tadcaster.
H. C.—1176, 1177, 1178.

Class 558.—*Rouen Drakes or Ducks, bred prior to* 1920. [11 entries.]

1183 I.—RALPH ALTY, Buckshaw Hall, Buxton, Chorley.
1186 II.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Reading.
1188 III. & 1185 R. N.—MASTER A. E. BREWIN, Llysmeirchion, Trefnant, R.S.O.
H. C.—1179, 1181, 1182. C.—1180.

Class 559.—*Rouen Drakes or Ducks, bred in* 1920. [5 entries.]

1191 I.—RALPH ALTY, Buckshaw Hall, Buxton, Chorley.
1190 II. & 1192 III.—F. W. MYHILL, The Red House, Hethel, Norwich.
1194 R. N.—J. S. HEPBURN, Astley, Nuneaton.

Class 560.—*White Indian Runner Drakes or Ducks, bred in* 1920. [8 entries.]

1195 I. & 1197 III.—REV. J. WILSON, Armathwaite, Carlisle.
1198 II.—MRS. W. STODDART, Kirkbride House, Kirkbride, Carlisle.
1201 R. N.—W. G. KINGWELL, Dartmoor Poultry Farm, South Brent, Devon.
H. C.—1196, 1200, 1202.

Class 561.—*Fawn Indian Runner Drakes, bred in* 1920. [7 entries.]

1206 I., 1208 II., 1204 III. & 1209 R. N.—REV. J. WILSON, Armathwaite, Carlisle.
H. C.—1203, 1205.

Class 562.—*Fawn Indian Runner Ducks, bred in* 1920. [9 entries.]

1211 I., 1215 II., 1213 III. & 1217 R. N.—REV. J. WILSON, Armathwaite, Carlisle.
H. C.—1210, 1212, 1216, 1218.

Class 563.—*Drakes or Ducks, any other colour, bred in* 1920. [9 entries.]

1223 I., 1225 II., & 1227 III.—REV. J. WILSON, Armathwaite, Carlisle.
1219 R. N.—RT. HON. H. PIKE PEASE, M.P., Merrow Croft, Guildford.
H. C.—1221, 1222, 1224. C.—1226.

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[1] Silver Medal given by the Yokohama Club for the best Yokohama in Classes 552 and 553.

Class 564.—*Drakes or Ducks, any other colour, bred prior to* 1920. [14 entries.]

1241 I. & 1239 R. N.—REV. J. WILSON, Armathwaite, Carlisle.
1233 II.—RT. HON. H. PIKE PEASE, M.P., Merrow Croft, Guildford.
1240 III.—ABBOT BROS., Thuxton, Norfolk.
H. C.—1228, 1231, 1234, 1235. C.—1230, 1237.

Class 565.—*Crested Drakes or Ducks, any colour.* [3 entries.]

1242 I.—R. SCOTT MILLER, Clydeneuk, Uddingstone, Glasgow.

Class 566.—*Drakes or Ducks, any other variety, bred prior to* 1920. [14 entries.]

1248 I. & 1251 III.—J. HUNTLEY & SON, Hirsel Poultry Farm, Coldstream.
1246 II.—R. S. WILLIAMSON, The Grange, Hednesford.
1252 R. N.—W. D. TRICKETT, Lench House, Waterfoot, Manchester.
H. C.—1245, 1249, 1253, 1254, 1256.

Class 567.—*Drakes or Ducks, any other variety, bred in* 1920. [6 entries.]

1259 I., 1262 II. & 1264 III.—J. HUNTLEY & SON, Hirsel Poultry Farm, Coldstream.
1260 R. N.—W. G. KINGWELL, Dartmoor Poultry Farm, South Brent, Devon.
H. C.—1263.

Geese.

Class 568.—*Embden Ganders.* [6 entries.]

1268 I.—ALFRED BIRCH, Edge Farm, Sefton, via Seaforth.
1266 II.—ABBOT BROS., Thuxton, Norfolk.
1265 III.—LADY HARLECH, Brogyntyn, Oswestry.
1270 R. N.—A. H. FOX-BROCKBANK, The Croft, Kirksanton, Silecroft, Cumberland.
H. C.—1267.

Class 569.—*Embden Geese.* [3 entries.]

1272 I.—ALFRED BIRCH, Edge Farm, Sefton, viâ Seaforth.
1273 II.—A. H. FOX-BROCKBANK, The Croft, Kirksanton, Silecroft, Cumberland.
1271 III.—ABBOT BROS., Thuxton, Norfolk.

Class 570.—*Toulouse Ganders.* [2 entries.]

1275 I.—J. S. HEPBURN, Astley, Nuneaton.
1274 II.—J. Y. WHEATLEY, Saxton, Tadcaster.

Class 571.—*Toulouse Geese.* [1 entry.]

1276 I.—J. S. HEPBURN, Astley, Nuneaton.

Turkeys.

Class 572.—*White Turkey Cocks or Cockerels.* [7 entries.]

1279 I.—MRS. F. NAGLE, Pamber Place, Charter Ley, Basingstoke.
1278 II.—MISS S. M. CORBETT, Stableford, Bridgnorth, Salop.
1280 III.—MISSES RANSFORD, Perseverance Poultry Farm, Pensford, Bristol.
1283 R. N.—ABBOT BROS., Thuxton, Norfolk.
H. C.—1277.

Class 573.—*White Turkey Hens or Pullets.* [5 entries.]

1285 I.—MISSES RANSFORD, Perseverance Poultry Farm, Pensford, Bristol.
1287 II.—W. CAINES, Ford Manor Dairy Farm, Lingfield, Surrey.
1288 III.—MRS. C. L. EVANS, Court of Noke, Pembridge, Herefordshire.

Class 574.—*Turkey Cocks, any other variety.* [3 entries.]

1289 I.—ABBOT BROS., Thuxton, Norfolk.

Class 575.—*Turkey Hens, any other variety.* [3 entries.]

1293 I.—ABBOT BROS., Thuxton, Norfolk.
1292 II.—MRS. C. LAING, Glendale, Haltwhistle.

Bantams.

Class 576.—*Sebright Bantam Cocks or Cockerels.* [5 entries.]

1299 I.—A. R. FISH, Holme Mead, Hutton, Preston.
1297 II.—W. & J. H. HEYS, Leftwich, Heyes, Davenham, Northwich.
1295 III.—J. F. ENTWISLE, Crigglestone, Manor Farm, near Wakefield.
1298 R. N.—T. H. EGGLESTONE, St. John's Chapel, Co. Durham.
H. C.—1296.

Class 577.—*Sebright Bantam Hens or Pullets.* [5 entries.]

1300 I.—W. & J. H. HEYS, Leftwich. Heyes, Davenham, Northwich.
1304 II.—A. R. FISH, Holme Mead, Hutton, Preston.
1303 III.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.
1301 R. N.—W. RICHARDSON, 13 Bootham Crescent, York.

Class 578.—*Wyandotte Bantam Cocks or Cockerels.* [8 entries.]

1310 I.—E. WHITAKER, Carrs Farm, Hebden Bridge.
1311 II.—F. SMITH, West End Villa, Pinxton, Nottingham.
1305 III.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.
1312 R. N.—W. & J. H. HEYS, Leftwich, Heyes, Davenham, Northwich.
H. C.—1308. C.—1306.

Class 579.—*Wyandotte Bantam Hens or Pullets.* [11 entries.]

1313 I.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.
1318 II.—F. ROBINSON, Hoyland Common, West Barnsley.
1321 III.—E. WHITAKER, Carrs Farm, Hebden Bridge.
1319 R. N.—A. D. RIDGWAY, Ivy Lodge, Mirfield, Yorks.
H. C.—1320. C.—1322.

Class 580.—*Scotch Grey Bantam Cocks or Cockerels.* [6 entries.]

1326 I., & 1329 R. N.—J. D. JOHNSTON, "Norwood," Albert Avenue, Sedgley Park, Prestwich, Lancs.
1325 II., & 1328 III.—J. MCCRAE, 13 Thomson Street, Kilmarnock, Ayrshire.
H. C.—1327.

Class 581.—*Scotch Grey Bantam Hens or Pullets.* [6 entries.]

1331 I., & 1334 II.—J. D. JOHNSTON, "Norwood," Albert Avenue, Sedgley Park, Prestwich, Lancs.
1330 III., & 1333 R. N.—J. MCCRAE, 13 Thomson Street, Kilmarnock, Ayrshire.
H. C.—1332.

Class 582.—*Old English Game Bantam Cocks or Cockerels.* [18 entries.]

1341 I.—J. DAWSON, Bashall Hall, near Clitheroe, Lancs.
1339 II.—MISS J. ASHWORTH, Queen's Place, Summerseat.
1350 III.—I. NICHOLSON, Outer House Farm, Framwellgate Moor, Co. Durham.
1346 R. N.—MRS. T. T. ROBINSON, Grey Coats Inn, Baggrow, Cumberland.
H. C.—1336, 1337, 1338, 1347, 1349. C.—1340, 1344, 1348.

Class 583.—*Old English Game Bantam Hens or Pullets.* [21 entries.]

1354 I.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.
1358 II.—J. DAWSON, Bashall Hall, near Clitheroe, Lancs.
1367 III.—I. NICHOLSON, Outer House Farm, Framwellgate Moor, Co. Durham.
1374 R. N.—A. H. BROWNSON, 42 Church Street, Nuneaton, Warwickshire.
H. C.—1356, 1362, 1365, 1369, 1372. C.—1360, 1368, 1371, 1373.

Class 584.—*Modern Game Bantam Cocks or Cockerels, any colour.* [7 entries.]

1377 I.—C. SNEDDON Kirkham, Lancs.
1380 II.—W. D. TRICKETT, Lench House, Waterfoot, Manchester.
1378 III.—T. H. STRETCH, Vine Cottage, Ormskirk.
1375 R. N.—A. R. FISH Holme Mead, Hutton, Preston.
H. C.—1376, 1379, 1381.

Class 585.—*Modern Game Bantam Hens or Pullets, any colour.* [9 entries.]

1386 I.—C. SNEDDON, Kirkham, Lancs.
1382 II.—T. H. STRETCH, Vine Cottage, Ormskirk.
1383 III.—W. D. TRICKETT, Lench House, Waterfoot, Manchester.
1384 R. N.—W. VART, 32 Mint Street, Kendal.
H. C.—1385, 1387, 1388, 1389, 1390.

Class 586.—*Black or White Rosecomb Bantam Cocks or Cockerels.* [2 entries.]

1392 I.—A. R. FISH, Holme Mead, Hutton, Preston.
1391 II.—R. FLETCHER HEARNSHAW, Fox Hill, Burton Joyce, Notts.

Class 587.—*Black or White Rosecomb Bantam Hens or Pullets.* [4 entries.]

1396 I.—A. R. FISH, Holme Mead, Hutton, Preston.
1394 II.—A. HARLAND, 146 Humble Lane, Wingate, Durham.
1393 III.—R. FLETCHER HEARNSHAW, Fox Hill, Burton Joyce, Notts.

Class 588.—*Barbu d'Anvers Cocks or Cockerels.* [7 entries.]

1398 I., & 1402 R. N.—MRS. E. F. HURT, The Old Mill, South Darley, Matlock.
1397 II., & 1403 III.—R. TERROT, Wispington House, Cookham, Berks.
H. C.—1399. C.—1401.

Class 589.—*Barbu d'Anvers Hens or Pullets.* [7 entries.]

1406 I.—J. C. PRESTON, Bay House, Ellel, Lancaster.
1410 II.—MRS. TERROT, Wispington House, Cookham, Berks.
1404 III.—MRS. E. F HURT, The Old Mill, South Darley, Matlock.
1408 R. N.—R. TERROT, Wispington House, Cookham, Berks.
H. C.—1409. C.—1405.

Class 590.—*Barbu d'Uccle Cocks or Cockerels.* [3 entries.]

1411 I., & 1413 II.—K. WARD, Tweed Villa, Haxby, York.

Class 591.—*Barbu d'Uccle Hens or Pullets.* [4 entries.]

1416 I., 1417 II., & 1414 III.—E. WARD, Tweed Villa, Haxby, York.

Class 592.—*Cochin or Pekin Bantam Cocks or Cockerels.* [9 entries.]

1419 I.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.
1418 II.—R S WILLIAMSON, The Grange, Hednesford.
1420 III.—A. HENSHAW, Norman Road, Ripley, Derbyshire.
1425 R. N.—GEORGE H. PROCTER, O.B.E., Flass House, Durham.
H. C.—1422. C.—1421.

Class 593.—*Cochin or Pekin Bantam Hens or Pullets.* [11 entries.]

1427 I.—R. S. WILLIAMSON, The Grange, Hednesford.
1429 II.—A. HENSHAW, Norman Road, Ripley, Derbyshire.
1436 III.—W. & J. H. HEYS, Leftwich, Heyes, Davenham, Northwich.
1428 R.N.—J. R. MARSHALL, Manor Terrace, Ferry Hill Village, Co. Durham.
H. C.—1434. C.—1432.

Class 594.—*Yokohama Bantam Cocks or Cockerels.* [3 entries.]

1439 I., & Silver Medal[1], 1438 II., & 1440 III.—F. J. S. CHATTERTON, 34 Elm Park Road, Finchley, London, N.

Class 595.—*Yokohama Bantam Hens or Pullets.* [3 entries.]

1441 I. & R.N. for Silver Medal[1], 1442 II., & 1443 III.—F. J. S. CHATTERTON, 34 Elm Park Road, Finchley, London, N.

Class 596.—*Japanese Bantam Cocks or Cockerels.* [4 entries.]

1445 I.—MRS. SMITH, Altadone, Preston.
1447 II., 1444 III. & 1446 R.N.—MAJOR G. T. WILLIAMS, Tredrea, Perranwell, Cornwall.

Class 597.—*Japanese Bantam Hens or Pullets.* [5 entries.]

1448 I., 1452 II. & 1450 III.—MAJOR G. T. WILLIAMS, Tredrea, Perranwell, Cornwall.

Class 598.—*Bantam Cocks or Cockerels, any other variety.* [9 entries.]

1459 I.—ALFRED BIRCH, Edge Farm, Sefton, viâ Seaforth.
1455 II.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.
1460 III.—H. MCFARLANE, Holbeck Hill, Wolsingham, Co. Durham.
1461 R.N.—A. H. BROWNSON, 42 Church Street, Nuneaton, Warwickshire.
H. C.—1454. C.—1456.

Class 599.—*Bantam Hens or Pullets, any other variety.* [10 entries.]

1462 I.—J. F. ENTWISLE, Crigglestone Manor Farm, near Wakefield.
1470 II.—ALFRED BIRCH, Edge Farm, Sefton, viâ Seaforth.
1471 III.—A. H. BROWNSON, 42 Church Street, Nuneaton, Warwickshire.
1463 R. N.—M. DAVID, St. Donats, Llantwit Major, Glam.
H. C.—1465, 1466.

RABBITS.

Belgian Hares.[2]

Class 600.—*Belgian Hare Adult Bucks.* [10 entries.]

7 I. (30s. & R. N. for Champion.[3])—MRS. S. E. WILLBE, 33 High Street, Fareham, Hants
9 II. (20s.)—J. MUSGROVE, 8 Renwick Terrace, Bensham, Gateshead.
2 III. (10s.)—J. WATERS, Tredwell Farm, Bickley Kent.
6 IV. (7s. 6d.)—MRS. J. L. APPLETON, Molescroft, Beverley.
3 R. N.—W. H. BETTS, Spinney Road, Irthlingboro', Northants.
H. C.—1 10. C.—5.

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[1] Silver Medal given by the Yokohama Club for the best Yokohama Bantam in Classes 594 and 595.

[2] Fourth Prizes given by the National Belgian Hare Club.

[3] The Newbury Challenge Trophy given by the National Belgian Hare Club for the best Belgian Hare in Classes 600-605.

Class 601.—*Belgian Hare Adult Does.* [11 entries.]

15 I. (30*s.* & Champion.[1]) & 11 II. (20*s.*)—J. Waters, Tredwell Farm, Bickley, Kent.
20 III. (10*s.*)—J. Baragwanath, The Maples, 88 Alcester Road, Moseley, Birmingham.
19 IV. (7*s.* 6*d.*)—J. Musgrove, 8 Renwick Terrace, Bensham, Gateshead.
18 R. N.—W. Exelby, 97 Poppleton Road, York.
H. C.—12, 16. C.—14.

Class 602.—*Belgian Hare Bucks, under six months.* [12 entries.]

33 I. (30*s.*)—F. Findall, 26 Vyner Street, Haxby Road, York.
23 II. (20*s.*)—A. Worsdall, 27 Montague Road, Clarendon Park, Leicester.
29 III. (10*s.*)—W. M. Judd, 151 Holmesdale Road, Bromley, Kent.
28 IV. (7*s.* 6*d.*) & 32 R. N.—Mrs. S. E. Willbe, 33 High Street, Fareham, Hants.
H. C.—26, 27.

Class 603.—*Belgian Hare Does, under six months.* [13 entries].

44 I. (30*s.*)—F. Findall, 26 Vyner Street, Haxby Road, York.
46 II. (20*s.*)—C. Cranmer, 30, Thorpe Street, Shotton Colliery, Sunderland.
40 III. (10*s.*)—Mrs. S. E. Willbe, 33 High Street, Fareham, Hants.
37 IV. (7*s.* 6 *d.*)—A. Fanshawe, 55 Gill Street, Hoyland, Barnsley.
35 R. N.—P. E. Greening, Cowley Villa, Hockmore Street, Cowley, Oxford.
H. C.—39, 41. C.—38.

Class 604.—*Belgian Hare Bucks, under four months.* [10 entries.]

47 I. (30*s.*)—J. Waters, Tredwell Farm, Bickley, Kent.
49 II. (20*s.*)—W. Exelby, 97 Poppleton Road, York.
53 III. (10*s.*)—T. Ward Swales, 21 South Parade, Spalding.
56 IV. (7*s.* 6*d.*)—Feetham & Son, Bowden Close, Crook, Durham.
54 R. N.—J. Musgrove, 8 Renwick Terrace, Bensham, Gateshead,
H. C.—51.

Class 605.—*Belgian Hare Does, under four months.* [16 entries.]

71 I. (30*s.*)—Feetham & Son, Bowden Close, Crook, Durham.
66 II. (20*s.*)—A. S. Tarrant, 118 Wornington Road, North Kensington.
60 III. (10*s.*)—W. Exelby, 97 Poppleton Road, York.
69 IV. (7*s.* 6*d.*)—G. Moffatt, 15 Princess Street, Mansfield, Notts
70 R. N.—R. Irwin, Victoria Terrace, Lanchester, Co. Durham.
H. C.—62.

Flemish Giants.[2]

Class 606.—*Flemish Giant Adult Bucks.* [7 entries.]

73 I. (30*s.* & R. N. for Special.[3])—S. Jefferies, 25 Treharne Road, Cadoxton, Barry.
79 II. (20*s.*)—T. Maudsley, 54 & 57 Market Hall, Southport
78 III. (10*s.*)—R. J. Bellchamber, Post Office, Hampton Wick, Middlesex.
77 IV. (5*s.*)—W. M. Warnett, 49 Grey Terrace, Ferryhill, Co. Durham.

Class 607.—*Flemish Giant Adult Does.* [4 entries.]

83 I. (30*s.*, & Special.[3])—R. J. Bellchamber, Post Office, Hampton Wick, Middlesex.

Class 608.—*Flemish Giant Bucks or Does, under six months.* [6 entries.]

85 I. (30*s.*, & R. N. for Special.[4])—J. O. Willis, High Street, Ewell, Surrey.
86 II. (20*s.*) & 89 R. N.—R. J. Bellchamber, Post Office, Hampton Wick, Middlesex.
87 III. (10*s.*)—T. Pettigrew, The Dene, Seaham Harbour.
88 IV. (5*s.*)—G. Ilett, 18 Dunmow Road, North Stratford.

Class 609.—*Flemish Giant Bucks or Does, under four months.* [7 entries.]

91 I. (30*s.*, & Special.[4])—J. O. Willis, High Street, Ewell, Surrey.
96 II. (20*s.*)—T. Mawdsley, 54 & 57, Market Hall, Southport.
92 III. (10*s.*). & 95 IV. (5*s.*)—R. J. Bellchamber, Post Office, Hampton Wick.
93 R. N.—Noel Sharman, 2 Carville Cottages, Wallsend-on-Tyne.
H. C.—90.

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[1] The Newbury Challenge Trophy given by the National Belgian Hare Club for the best Belgian Hare in Classes 600-605.

[2] Fourth Prizes given by the National Flemish Giant Rabbit Club.

[3] Special Prize given by the National Flemish Giant Rabbit Club for the best adult Flemish Giant.

[4] Special Prize given by the National Flemish Giant Rabbit Club for the best young Flemish Giant.

English.

Class 610.—*English Adult Bucks or Does, any colour.* [11 entries.]

100 I. (30*s*., & Special.[1])—HENRY LISTER, Star & Garter Hotel, Kirkstall, Leeds.
103 II. (20*s*.)—E. BARMORE, 21 Roberts Street, Patricroft.
104 III. (10*s*.)—JOHNSON & BELLAMY, 221 Freeman Street, Grimsby.
99 R. N.—C. STABLER, 156 Craig Street, Darlington.
H. C.—105.

Class 611.—*English Bucks or Does, black or blue, under five months.* [18 entries.]

119 I. (30*s*.)—J. T. SMITH, 3 Godbey Street, Newton, near Hyde, Cheshire.
109 II. (20*s*.)—J. JOHNSON, Shadforth, Durham.
125 III. (10*s*.)—H. FURNISH, 6 Upper Russell Street, Darlington.
118 R. N.—MRS. J. L. APPLETON, Molescroft, Beverley.
H. C.—116.

Class 612.—*English Bucks or Does, any other colour under five months.* [18 entries.]

142 I. (30*s*., & R. N. for Special.[1])—H. FURNISH, Upper Russell Street, Darlington.
137 II. (20*s*.)—WILLIAMS & SON, 1 Station Terrace, Nantybwch, Tredegar.
134 III. (10*s*.)—C. STABLER, 156 Craig Street, Darlington.
143 R. N.—M. KEENLYSIDE, 13 Cornwall Street, West Hartlepool.
H. C.—129.

Dutch.

Class 613.—*Dutch Adult Bucks or Does, any colour.* [11 entries.]

149 I. (30*s*., & Special.[2])—HENRY LISTER, Star & Garter Hotel, Kirkstall, Leeds.
150 II. (20*s*.)—T. WARD SWALES, 21 South Parade, Spalding.
147 III.—(10*s*.)—W. E. PARRY, Merton Abbey, Bootle, Liverpool.
154 R. N.—BANK & MAWSON, 79 Park Road, Thackley, Bradford, Yorks.
H.C.—144.

Class 614.—*Black Dutch Bucks or Does, under four months.* [19 entries.]

163 I. (30*s*.)—HENRY LISTER, Star & Garter Hotel, Kirkstall, Leeds.
166 II. (20*s*.)—J. W. HANDFORD, 50 Thornton Lodge Road, Huddersfield.
157 III. (10*s*.)—J. JOHNSON, Shadforth, Durham.
172 R. N.—T. W. KIDD, Westgate, Durham.
H. C.—165.

Class 615.—*Dutch Bucks or Does, any other colour, under four months.* [19 entries.]

177 I. (30*s*., & R. N. for Special.[2])—W. E. PARRY, Merton Abbey, Bootle, Liverpool.
185 II. (20*s*.)—FOORD BROS., Halfway House, Thornley S.O., Co. Durham.
174 III. (10*s*.)—L. WEBSTER, North Road, Sutton-on-Trent, Newark.
181 R. N.—HENRY LISTER, Star & Garter Hotel, Kirkstall, Leeds.
H. C.—186, 191. C.—188.

Angoras.

Class 616.—*Angora Bucks or Does, Adult.* [12 entries.]

198 I. (30*s*., & Special.[3])—J. & E. HOLMES, 44 Old Birch, Darwen, Lancs.
196 II. (20*s*., & R. N. for Special.[3])—A. WRIGHT, Ullesthorpe, near Lutterworth.
203 III. (10*s*.) & 202 R. N.—MISS E. MILNES, 9 Kent Road, Harrogate.
H. C.—199, 204. C.—200.

Class 617.—*Angora Bucks or Does, under four months.* [14 entries.]

210 I. (30*s*., & Special.[4])—DODD & SPARK, Graham Street, Stanhope, Durham.
213 II. (20*s*., & R. N. for Special.[4])—J. & E. HOLMES, 44 Old Birch, Darwen, Lancs.
209 III. (10*s*.)—C. BICKERTON & SON, 3 Waddington Street, Cockton Hill, Durham.
217 R. N.—MISS E. MILNES, 9 Kent Road, Harrogate.
H. C.—205, 207, 212. C.—211.

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[1] Special Prize given by the National English Rabbit Club for the best English Rabbit in Classes 610–612.

[2] Special Prize given by the United Kingdom Dutch Rabbit Club for the best Dutch Rabbit in Classes 613–615.

[3] Special Prize given by the Universal Angora Rabbit Club for the best Angora Adult.

[4] Special Prize given by the Universal Angora Rabbit Club for the best Young Angora.

Beverens.[1]

Class 618.—*Beveren Giant Buck, adult.* [14 entries.]

226 I. (30*s*.) & 221 II. (20*s*.)—W ADAMS, Oakdene, Loughton, Essex
222 III. (10*s*.)—MRS W. B. GOODE, Aldborough Lodge, Boroughbridge.
230 IV. (6*s*.)—E. A. C. LLOYD, The Briars, Gerrards Cross, Bucks
231 V. (4*s*.)—MRS. VESSIE E COOMBS, Cathedral School, Llandaff, S Wales
232 R. N.—LADY LAYLAND-BARRATT, The Manor House, Torquay
H. C.—220. C.—219.

Class 619.—*Beveren Giant Does, adult.* [12 entries.]

238 I. (30*s*.)—A. MAXWELL, May Cottage, Laleham-on-Thames.
234 II. (20*s*.) & 240 IV. (6*s*.)—W ADAMS, Oakdene, Loughton, Essex
244 III. (10*s*.)—G COBB, The Poplars, Leavesden Green, Watford.
235 V. (4*s*.)—MRS. W. B. GOODE, Aldborough Lodge, Boroughbridge.
237 R. N.—CAPTAIN R. MAYER, Collington Manor Rabbitry, Bexhill.
H. C.—239 C.—236

Class 620.—*Beveren Giant Bucks or Does, under four months.* [19 entries.]

262 I. (30*s*.)—MRS. A CHAVASSE, 56 High Street, Sutton Coldfield
249 II. (20*s*.)—CAPTAIN R MAYER, Collington Manor Rabbitry, Bexhill.
254 III. (10*s*.)—W. ADAMS, Oakdene, Loughton, Essex
259 IV. (6*s*.)—S KIRBY, "Oaklea," Fairwater Grove, Llandaff, Cardiff
257 V. (4*s*.)—DOUGLAS NEAME, Riverbank, Laleham, Staines
253 R. N.—MRS EDWIN ROBSON, Sutton House, Sutton, Hull.
H. C.—248, 250, 255, 260. C.—256.

Class 621.—*Beveren Giant White Bucks or Does, any age.* [9 entries.]

264 I. (30*s*.) & 267 V. (4*s*.)—MRS LACY-HULBERT, Morden Grange, Mitcham, Surrey.
265 II. (20*s*.)—F M. REYNOLDS, Egerton Road, Melton Mowbray.
266 III. (10*s*.)—MRS W. B GOODE, Aldborough Lodge, Boroughbridge.
268 IV. (6*s*.)—G. COBB, The Poplars, Leavesden Green, Watford.
H.C.—271. C.—269, 272.

Havanas.[2]

Class 622.—*Havana Bucks, adult.* [6 entries.]

278 III. (10*s*.)—G. D. P TURNER, 8 Fairwater Grove, Llandaff Glam
276 IV. (6*s*.)—A MAXWELL, May Cottage, Laleham-on-Thames.
275 V. (4*s*.)—MISS S MACFIE, Rowton Hall, Chester

Class 623.—*Havana Does, adult.* [6 entries.]

282 IV. (6*s*.)—F. T. ALLEN 3 High Street, Ramsey, Huntingdonshire.
281 V. (4*s*.)—MISS S. MACFIE, Rowton Hall, Chester.

Class 624.—*Havana Bucks or Does, under four months.* [7 entries.]

287 II. (20*s*.)—A MAXWELL, May Cottage, Laleham-on-Thames.
292 III. (10*s*.)—F. T. ALLEN, 3 High Street, Ramsey Huntingdonshire.
291 IV. (6*s*.) & 288 V. (4*s*.)—MRS. WOOLSTON-WATT, 230 Maryvale Road, Bournville Birmingham.

Silver.

Class 625.—*Silver Grey Bucks or Does, Adult.* [12 entries.]

296 I. (30*s*.)—B SANDERSON, 35 Northumberland Street, West Hartlepool.
298 II. (20*s*.)—W H GREENLEES, Lily Bank, Davyhulme, Manchester.
293 III. (10*s*.)—F. W. WESTERN, J.P., Holme Grove, Biggleswade
295 R. N.—S. LAMB, 25 Peel Green Road, Barton-on-Irwell, Patricroft, Manchester.

Class 626.—*Silver Grey Bucks or Does, under five months.* [15 entries.]

310 I. (30*s*.)—S. LAMB, 25 Peel Green Road, Barton-on-Irwell, Patricroft, Manchester.
312 II. (20*s*.) & 309 R. N.—COOK & OUGHTRED, Springfield, West Hartlepool.
308 III. (10*s*.)—A. K CROWTHER, Commercial Street, Batley, Yorks
H. C.—313 C.—305.

Class 627.—*Silver Fawn Bucks or Does, Adult.* [6 entries.]

321 I. (30*s*. & Special [3])—J PARKER c o C. Dobinson, 12 Havelock Street, Darlington
325 II. (20*s*.) & 322 III. (10*s*.)—J W BROWN, 8 Graham Terrace, New Shildon.
324 R. N.—MRS. R. GREENWOOD, Harmin Road, Barnard Castle
H. C.—323

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[1] Fourth and Fifth Prizes given by the Beveren Club

[2] Fourth and Fifth Prizes given by the Beveren Club

[3] Special Prize of £1 1*s*. given by the National Silver Rabbit Club for the best Adult Silver, any colour.

Class 628.—*Silver Fawn, Bucks or Does, under five months.* [15 entries.]

323 I. (30*s*., & R. N. for Special.[1])—J. EVANS, 13 Charles Street, Darlington.
334 II. (20*s*.)—J. W. BROWN, 8 Graham Terrace, New Shildon, Co. Durham.
335 III. (10*s*.)—R. JACKSON, 7 Graham Terrace, New Shildon, Co. Durham.
326 R. N.—F. W. WESTERN, Holme Grove, Biggleswade.
H. C.—330. C.—339.

Class 629.—*Silver Brown Bucks or Does, Adult.* [5 entries.]

345 I. (30*s*., & R. N. for Special[2]) & 344 II. (20*s*.)—THOMPSON BROS., Front Street, Stanhope S.O., Co. Durham.
341 III. (10*s*.)—F. W. WESTERN, Holme Grove, Biggleswade.

Class 630.—*Silver Brown Bucks or Does, under five months.* [11 entries.]

350 I. (30*s*., & Special,[1]) & 353 II. (20*s*.)—THOMPSON BROS., Front Street, Stanhope S.O.
347 III. (10*s*.)—J. BARAGWANTH, The Maples, 88 Alcester Road, Moseley, Birmingham.
352 R. N.—W. SKINNER, Station Road, Egglescliffe.
H. C.—346. C.—348.

Lops.

Class 631.—*Lop Bucks or Does, any age.* [6 entries.]

358 I. (30*s*.)—A. K. CROWTHER, Commercial Street, Batley, Yorks.
361 II. (20*s*.) & 357 III. (10*s*.)—G. ROBSON, Tollerton, Easingwold, Yorks.
362 R. N.—J. MUSGRAVE, 8, Renwick Terrace, Bensham, Gateshead.
H. C.—359. C.—360.

Tans.

Class 632.—*Tan Buck or Doe, adult.* [8 entries.]

367 I. (30*s*., & Special[3]) & 370 R. N.—H. RICHARDSON, 10 Baker Street, York.
363 II. (20*s*.)—DAVID W. IRVING, 11 Chambers Road, Southport.
368 III. (10*s*.)—MRS. H. HILL, 356 Main Road, Darnall, Sheffield.
H. C.—366. C.—369.

Class 633.—*Tan Bucks or Does, under five months.* [3 entries.]

372 I. (30*s*., & R. N. for Special.[3])—A. PICKLES, 13 Woodlands Road, Girlington, Bradford.
371 II. (20*s*.)—DAVID W. IRVING, 11 Chambers Road, Southport.

Polish.[4]

Class 634.—*Polish Bucks or Does, under six months.* [13 entries.]

384 I. (30*s*. & Special.[5])—DR. J. M. SHAW, 12 Park Terrace, Sunderland.
375 II. (20*s*, & R. N. for Special[5]) & 379 IV. (5*s*.)—MRS. H. DANCER, Church Street, Leatherhead, Surrey.
378 III. (10*s*.)—ATKINSON & NOEL, 63 Station Road, Hetton-le-Hole, Co. Durham.
376 R. N.—J. MEYNELL, 48 North Road, Darlington.
H. C.—384. C.—374.

Dressed Pelts.

Class 635.—*Single Dressed Skins.* [1 entry.]

[No Award.]

Class 636.—*Selection of Matched Skins in sets of three.* [3 entries.]

390 I. (30*s*.)—C. HALL, Church View, Sedgefield, Durham.
388 II. (20*s*.)—MRS LACY HULBERT, Morden Grange, Mitcham, Surrey.
389 III. (10*s*.)—MRS. E. E. BEDFORD, Morley Rectory, Derby.

Cavies.

Class 637.—*Peruvian Adults.* [5 entries.]

393 I. (30*s*., & R. N. for Special.[6])—J. ESPLIN, Dunure' Cottage, Bonny Bridge, Scotland.
392 II. (20*s*.)—WALTON & WALLER, 31 Church Street, Shildon, Co. Durham.
395 III. (10*s*.)—W. J. SPEAKE, 86 Hubert Road, Selly Oak, Birmingham.
394 R. N.—D. WALSH, 38 Lydia Street, Accrington.
H. C.—391.

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[1] Special Prize of £1 1*s*. given by the National Silver Rabbit Club for the best Young Silver, any colour.

[2] Special Prize of £1 1*s*. given by the National Silver Rabbit Club for the best Adult Silver any colour.

[3] Special Prize of 5*s*. given by the Tan Club for the best Tan in Classes 632 and 633.

[4] Fourth Prize given by the National Polish Rabbit Club.

[5] Special Prize given by the National Polish Rabbit Club for the best Polish Rabbit in Class 634.

[6] Special Prize given by the National Cavy Club for the best Cavy.

Class 638.—*Abyssinian Adults.* [9 entries.]

398 **I.** (30s.) & 401 **III.** (10s.)—T. GRAYSMARK, 8 Dudden Hill Lane, Willesden.
399 **II.** (20s.)—E. E. JOHNSON, 9 Jacksonville, Goole Yorks.
396 **R. N.**—E. E. LLOYD, 12 Larkspur Terrace, Jesmond, Newcastle-on-Tyne.
H. C.—400, 403, 404.

Class 639.—*Black Smooth Self, Adults.* [9 entries.]

413 **I.** (30s.) & 411 **III.** (10s.)—A. R. CUNLIFFE-OWEN, The Red House, Loughborough.
406 **II.** (20s.)—J. A. BUTLER, 39 Rawmarch Hill, Parkgate, Rotherham.
410 **R. N.**—J. H. MILLINGTON, 181 Masbro Street, Rotherham.
H. C.—407, 408. **C.**—412.

Class 640.—*Red Smooth Self, Adults.* [5 entries.]

418 **I.** (30s.) & 417 **II.** (20s.)—A. R. CUNLIFFE-OWEN, The Red House, Loughborough.
415 **III.** (10s.)—F. HARGREAVES "Edenhurst," Brooklands Road, Burnley.
416 **R. N.**—G. C. FIRTH, 40 Bennett Road, Cleethorpes.
H. C.—414.

Class 641.—*Cream Smooth Self, Adults.* [13 entries.]

421 **I.** (30s.)—E. E. JOHNSON, 9 Jacksonville, Goole, Yorks.
430 **II.** (20s.)—A. R. CUNLIFFE-OWEN, The Red House, Loughborough.
422 **III.** (10s.)—A. J. PHILLIPSON, 3 The Hawthorns, Woodbridge Road, Moseley, Birmingham
420 **R. N.**—THOMPSON BROS., 4 Oseney Crescent, London, N.W.
H. C.—428, 431. **C.**—419.

Class 642.—*Smooth Self, any other colour, Adults.* [6 entries.]

435 **I.** (30s.)—C. SWINDELL, 20 Thudchill, Manchester.
434 **II.** (20s.)—L. TINGLE, 10 Hollybush Street, Parkgate, Rotherham, Yorks.
436 **III.** (10s.)—A. R. CUNLIFFE-OWEN, The Red House Loughborough.
432 **R. N.**—M. GOLIGHTLY, 23 Boyne Street, Willington, Durham.
H.C.—437.

Class 643.—*Smooth Golden Agoute, adults.* [15 entries.]

442 **I.** (30s. & Special.[1])—A. FOSTER, Myrtle Royd, Bingley, Yorkshire.
440 **II.** (20s., & R. N. for Special.[1])—PICKUP & CRANE, 5 Clarence Street, Barnoldswick, Yorks.
452 **III.** (10s.)—F. & W. BREWER, Whoberley, Coventry.
443 **R. N.**—J. WRIGHT, 16 Bridge Street, Bishop Auckland.
H.C.—444, 451. **C.**—449.

Class 644.—*Smooth Silver Agoute, adults.* [6 entries.]

454 **I.** (30s. & Special[2])—F. HARGREAVES "Edenhurst" Brooklands Road, Burnley.
457 **II.** (20s. & R. N. for Special[2]) & 458 **R.N.**—H. HABERSHON, 15 Newlyn Place, Woodseats, Sheffield.
455 **III.** (10s.)—E. LANKFORD, The Rising Sun, Hatfield.
H. C.—453, 456.

Class 645.—*Smooth Tortoise and White, adults.* [3 entries.]

460 **I.** (30s.)—H. BRADLEY, Dawson Hill, Morley, Leeds.
459 **II.** (20s.) & 461 **III.** (10s.)—A. BROOKS, 29 Park Grove, Levenshulme.

Class 646.—*Smooth Dutch, any colour, adults.* [8 entries.]

464 **I.** (30s., & Special[3]) & 468 **III.** (10s.)—J. E. KERR, Harviestoun Castle, Dollar.
463 **II.** (20s.) & 467 **R. N.**—F. HARGREAVES, "Edenhurst," Brooklands Road Burnley.
H. C.—466, 469. **C.**—462.

Class 647.—*Smooth Self, any colour, under four months.* [13 entries.]

477 **I.** (30s.) & 474 **R. N.**—T. WATERWORTH, 48 Primrose Street, Accrington, Lancs.
475 **II.** (20s.)—G. C. FIRTH, 40 Bennett Road, Cleethorpes.
476 **III.** (10s.—H. HABERSHON, 15 Newlyn Place, Woodseats, Sheffield.
H. C.—473, 480, 482. **C.**—472.

Class 648.—*Any other Variety, under four months.* [15 entries.]

495 **I.** (30s.)—T. E. LONGSTAFF, Waterville, Grosvenor Drive, Whitley Bay.
485 **II.** (20s.)—J. E. KERR, Harviestoun Castle, Dollar.
496 **III.** (10s.)—E. BROOKE, The Nurseries, Wilsden, Bradford.
492 **R. N.**—H. WALSH, 38 Lydia Street, Accrington
H. C.—488, 494.

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[1] Special Prize given by the National Cavy Club for the best Golden Agoute.
[2] Special Prize given by the National Cavy Club for the best Silver Agoute.
[3] Special Prize given by the National Cavy Club for the best Cavy.

FARM AND DAIRY PRODUCE OF THE UNITED KINGDOM.

Butter.

First Prize £4, Second Prize £2, Third Prize £1 in each Class.

Class 649.—*Two Pounds of Fresh Butter, without any salt, made up in plain pounds, from the milk of Channel Island, Devon, or South Devon Cattle and their crosses.* [18 entries.]

16 I.—MRS. JOHN WAY, West Bridge, Bishop's Nympton, South Molton, N Devon
14 II.—MISS ANNIE PRICHARD, The Dairy, Welbeck, Worksop
12 III.—MRS W. HOWARD PALMER, Murrell Hill, Binfield Berks.
10 R. N.—BRIG.-GEN. SIR JOSEPH LAYCOCK, K.C.M.G., D.S.O., Wiseton, Bawtry.
H. C.—6. C.—7.

Class 650.—*Two Pounds of Fresh Butter, without any salt, made up in plain pounds, from the milk of Cattle of any breed or cross other than those mentioned in Class* 649. [17 entries.]

19 I.—MRS. JOHN ARMSTRONG, New Hall, Staveley, Kendal.
35 II.—MRS. WALTON, Bail Green Farm, Mickleton Yorks.
29 III.—MRS. W. E. MUDD, Thornthwaite, Darley, Harrogate.
32 R. N.—MISS MARY SIMPSON, Hall Farm, Moulton, Middleton Tyas. Yorks.
H. C.—23. C.—25.

Class 651.—*Two Pounds of Fresh Butter, slightly salted, made up in plain pounds, from the milk of Channel Island, Devon, or South Devon Cattle and their crosses.* [24 entries.]

56 I.—MRS. JOHN WAY, West Bridge, Bishop's Nympton, South Molton, Devon.
52 II.—MRS. D. T. POSKITT, Hay Green, Fish Lake, Doncaster.
51 III.—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks.
48 R. N.—MRS. H. E JEROME, Bilton Hall, York.
H. C., 37, 42. C.—55.

Class 652.—*Two Pounds of Fresh Butter, slightly salted, made up in plain pounds, from the milk of Cattle of any breed or cross other than those mentioned in Class* 651. [24 entries.]

79 I.—MISS S. H ROBINSON, Red House Farm, Liverton, Loftus S O.
78 II.—MRS. W. E. MUDD, Thornthwaite, Darley, Harrogate.
68 III.—MRS. GILL, West Crane Row, Butterknowle, Co. Durham.
60 R. N.—MRS. JOHN ARMSTRONG, New Hall, Staveley, Kendal.
H. C.—71, 77. C.—67.

Class 653.—*Three Pounds of Fresh Butter, slightly salted, made up in pounds in the most attractive marketable designs.* [9 entries.]

92 I.—MRS. JOHN WAY, West Bridge, Bishop's Nympton, South Molton, Devon.
89 II.—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks.
86 III.—MRS A. A. BERE, Stoodleigh Barton, Stoodleigh, Tiverton, Devon.
90 R. N.—MISS DOROTHY SMITH, Home Farm, Hulton Gate, Guisborough.
H. C.—85, 87. C.—88

Class 654.—*Three Pounds of Fresh Butter, slightly salted, made up in pounds, and packed in non-returnable boxes for transmission by rail or parcel post.* [8 entries.]

100 I.—MRS. JOHN WAY, West Bridge, Bishop's Nympton, South Molton, Devon.
97 II.—MRS. W. HOWARD PALMER, Murrell Hill, Binfield, Berks.
98 III.—MISS S. H. ROBINSON, Red House Farm, Liverton, Loftus S O.
96 R. N.—MRS. MATILDA MORTON, Leake Hall, Thirsk.
H. C.—93, 94.

Cheese.

Made in 1920.

Class 655.—*Two Cheshire Cheeses, Coloured, not less than 40 lb. each.* [5 entries.]

104 I. (£5.)—F. A. MOORE, The Grange, Checkley, Nantwich.
105 II. (£3.)—RUYTON CO-OPERATIVE DAIRIES, LTD., Ruyton Eleven Towns, Salop.
103 III. (£2.)—W. R. LEA, Manor Farm, Hatherton, Nantwich.
102 R. N.—W. H. HOBSON, Woodhey Hall, Nantwich.

Class 656.—*Two Cheshire Cheeses, Uncoloured, not less than* 40 *lb. each.* [5 entries.]

110 I. (£5.)—RUYTON CO-OPERATIVE DAIRIES, LTD., Ruyton Eleven Towns, Salop.
108 II. (£3.)—W. R. LEA, Manor Farm Hatherton, Nantwich.
109 III. (£2.)—F. A. MOORE, The Grange, Checkley, Nantwich.
107 R. N.—W. H. HOBSON, Woodhey Hall, Nantwich.

Class 657.—*Two Cheddar Cheeses, not less than* 50 *lb. each.* [9 entries.]

119 I. (£5.)—ALEXANDER WYLLIE, Mossgiel, Mauchline, Ayrshire.
111 II. (£3.)—B R. BROUGHTON, Manor Farm, North Perrott, Crewkerne, Somerset.
114 III. (£2.)—ALEXANDER CROSS, Knockdon, Maybole.
116 R. N.—ROBERT KERR, Mackermore, Newton Stewart, Wigtownshire.
H. C.—118.

Class 658.—*Two Cheddar Truckles.* [10 entries.]

129 I. (£4.)—ALEXANDER WYLLIE, Mossgiel, Mauchline, Ayrshire.
120 II. (£2.)—B. R BROUGHTON, Manor Farm, North Perrott, Crewkerne, Somerset.
123 III. (£1.)—P. H. FRANCIS, Miller's Farm, Upton Noble, Bruton, Somerset.
125 R. N.—ROBERT KERR, Mackermore, Newton Stewart, Wigtownshire,
H. C.—128. C.—124.

Class 659.—*Two Lancashire Cheeses, not over* 12 *lb. each.* [1 entry.]
[No Award.]

Class 660.—*Two Staffordshire or Derbyshire Cheeses.* [2 entries.]

131 I. (£4.)—CHEDDAR VALLEY DAIRY COMPANY, LTD., 47 City Road, Cardiff.
132 R. N.—J. M. NUTTALL & CO., LTD., Dove Dairy, Hartington, Buxton.

Class 661.—*Two Stilton Cheeses.* [9 entries.]

140 I. (£4.)—MISSES M. F. & J. WEBSTER, Hatton Lodge, Nether Brompton, Melton Mowbray.
136 II. (£2.)—HENRY MORRIS, Manor Farm, Saxelby, Melton Mowbray.
139 III. (£1.)—FRED. WEBSTER, Shoby Priory, Melton Mowbray.
141 R. N.—WEBSTER & RICHARDSON, The Dairy, Twyford, Melton Mowbray.
H. C.—133. C.—135.

Class 662.—*Two Wensleydale Cheeses, Stilton Shape.* [10 entries.]

151 I. (£4.)—THE WENSLEYDALE PURE MILK SOCIETY, LTD., The Dairy, Northallerton.
150 II. (£2.)—ALFRED ROWNTREE The Dairy, Coverham, Middleham.
145 III. (£1.)—MISS RACHEL JAMES, Llancayo, Usk, Mon.
144 R. N.—GEORGE HARRISON, Gainford Hall, Darlington.

Class 663.—*Two Wensleydale Cheeses, Flat Shape.* [10 entries.]

159 I. (£4.)—ALFRED ROWNTREE, The Dairy, Coverham Middleham.
161 II. (£2.)—THE WENSLEYDALE PURE MILK SOCIETY, LTD., The Dairy, Northallerton.
154 III. (£1.)—MRS. T. DIMSDALE, Swine Cote, Thorlaby, Aysgarth.
158 R. N.—MRS JOHN PROCTOR, Saw Mill House, Hunton, Bedale,

Class 664.—*Two Cotherstone Cheeses, Stilton Shape.* [7 entries.]

167 I. (£4.)—ALFRED ROWNTREE, The Dairy, Coverham, Middleham.
164 II. (£2.)—MRS. R. M. METCALFE, Hundah, Barnard Castle.
168 III. (£1.)—THE WENSLEYDALE PURE MILK SOCIETY, LTD., The Dairy, Northallerton.
163 R. N.—GEORGE HARRISON, Gainford Hall, Darlington.
H. C.—162.

Class 665.—*Two Cotherstone Cheeses, Flat Shape.* [5 entries.]

170 I. (£4.)—GEORGE HARRISON, Gainford Hall, Darlington.
173 II. (£2.)—THE WENSLEYDALE PURE MILK SOCIETY, LTD., The Dairy, Northallerton.
172 R. N.—ALFRED ROWNTREE, The Dairy, Coverham, Middleham.

Class 666.—*Two Cleveland Cheeses.* [7 entries.]

176 I. (£4.)—ROBERT HICKS, Stonebeck Gate Farm, Danby, Grosmont.
174 II. (£2.)—JOSEPH CLEMMIT, Park Head Farm, Fryup, Lealholm, Grosmont, Yorks.
175 III. (£1.)—MRS. J. T. GARBUTT, Street Farm, Loftus.
180 R. N.—MISS S. H. ROBINSON, Red House Farm, Liverton, Loftus S.O.

Class 667.—*Two Caerphilly Cheeses.* [15 entries.]

194 I. (£4.)—THE WILTS UNITED DAIRIES, LTD., Wells, Somerset.
183 II. (£2.)—MISS E. HOWELLS, Rythir Fawr, Pencoed, Bridgend, Glam.
193 III. (£1.)—THE WEST OF ENGLAND CREAMERY, Highbridge, Somerset.
195 R. N.—MRS T. JOHN Ruthin Farm, Pencoed, Bridgend.
H. C.—182.

Class 668.—*Two Small Cheeses, not exceeding* 6 *lb. each, of Cheddar or Cheshire Character.* [22 entries.]

203 I. (£3.)—Mrs. E. M. Evans, Welshers Farm, Clatworthy, Wiveliscombe.
214 II. (£2.)—Miss F. A. Rawle, South Quarme Farm, Wheddon Cross, Taunton.
201 III. (£1.)—Miss Elsie G. Cook, Ashford Farm, Ashford, Middlesex.
198 R. N.—Miss K. M. Clapp, Manor Farm, Oake, Taunton, Somerset.
H. C.—196, 199, 216. C.—200.

Class 669.—*Two Small Cheeses, not exceeding* 6 *lb. each, of Stilton or Wensleydale Character.* [21 entries.]

230 I. (£3.)—Miss B. J. Mudd, Aldborough Dairy, Boroughbridge.
234 II. (£2.)—Alfred Rowntree, The Dairy, Coverham, Middleham.
232 III. (£1.)—Miss E. M. Robinson, Sherwood, Barnard Castle.
228 R. N.—Mrs. R. M. Metcalfe, Hundah, Barnard Castle.
H. C.—222, 236. C.—225, 226, 235.

Class 670.—*Two Soft Cheeses made from Whole Milk.* [8 entries.]

243 I. (£3.)—Mrs. W. Howard Palmer, Murrell Hill, Binfield, Berks.
241 II. (£2.)—Miss Bessie Marsh, Church Farm, Shapwick, Bridgwater, Somerset.
242 III. (£1.)—Miss B. J. Mudd, Aldborough Dairy, Boroughbridge.

Class 671.—*Two Soft Cheeses made from Cream without the addition of Rennet.* [11 entries.]

250 I. (£3.)—Miss M. Garbutt, Street Farm, Loftus.
251 II. (£2.)—Hubert Hutt, Wheatfield, Tetsworth, Oxon.
254 III. (£1.)—Mrs. A. J. Plews, Low Green Farm, Romaldkirk, Darlington.
246 R. N.—R. A. Bennett & A. H. S. Howard, Quarry Farm, Thornbury, Glos.

Cider and Perry.

First Prize, £3; Second Prize, £2; Third Prize, £1, in each class.

Class *672.—*Casks of Dry Cider, not less than* 9, *and not more than* 18 *gallons, made in* 1919. [5 entries.]

257 I.—Herbert J. Davis, Goldsborough Farm, Sutton Montis, Sparkford, Somerset.
260 II.—Tilley Bros., East Compton, Shepton Mallet, Somerset.

Class 673.—*Casks of Sweet Cider, not less than* 9, *and not more than* 18 *gallons, made in* 1919. [8 entries.]

262 I.—Herbert J. Davis, Goldsborough Farm, Sutton Montis, Sparkford, Somerset.
268 II.—Tilley Bros, East Compton, Shepton Mallet, Somerset.

Class 674.—*Casks of Cider, not less than* 9, *and not more than* 18 *gallons, made previous to* 1919. [1 entry.]

270 I.—Ridler & Son, Clehonger, Hereford.

Class 675.—*One Dozen Bottles of Dry Cider, made in* 1919. [9 entries.]

271 I.—R. N. for Challenge Cup.,[1] & 272 R. N.—Herbert J. Davis, Goldsborough Farm Sutton Montis, Sparkford, Somerset.
279 II. & 278 III.—Tilley Bros., East Compton, Shepton Mallet, Somerset.

Class 676.—*One Dozen Bottles of Sweet Cider, made in* 1919. [20 entries.]

284 I. Challenge Cup.,[1] & 285 II.—Capt. F. W. Crawshay, Hempnall, Norwich.
290 III.—H. J. Jones, Church Farm, Blakemire, Herefordshire.
293 R. N.—Ridler & Son, Clehonger, Hereford.
H. C.—286. C.—280.

Class 677.—*One Dozen Bottles of Cider, made previous to* 1919. [7 entries.]

306 I. & 305 III.—Ridler & Son, Clehonger, Hereford.
300 II.—Capt. F. W. Crawshay, Hempall, Norwich.
304 R. N.—W. D. Lane, White House, Llanvetherin, Abergavenny.

Class 678.—*One Dozen Bottles of Dry Perry.* [1 entry.]

307 I.—Joseph M. Parry & Co., Ltd., Westbury Cider Works, Leominster.

Class 679.—*One Dozen Bottles of Sweet Perry.* [3 entries.]

310 I.—Henry Robbins & Son, Ebley, Stroud, Glos.
308 II.—Joseph M. Parry & Co., Ltd., Westbury Cider Works, Leominster.

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[1] Challenge Cup given by the Cider Growers of the West of England for the best exhibit of Cider in Classes 672 to 677.

Bottled Fruits and Vegetables.

Class 680.—*Six Varieties of Fruit bottled in water, to be selected from Red Plums, Yellow Plums, Victoria Plums, Greengages, Pears, Apricots, Apples, Damsons, and Cherries.* [6 entries.]

311 I. (£3.)—MISS J. BLACKBURN, College Square, Stokesley, Yorkshire.
314 II. (£2.)—MRS M. E. PARLOUR, Croft, Darlington.
316 III. (£1)—GEORGE WILLIAM WEATHERILL, Belmont, Stokesley, S.O.
312 R. N.—MISS ELSIE G. COOK, Ashford Farm, Ashford, Middlesex.
H. C.—313.

Class 681.—*Three Varieties of Soft Fruit bottled in water, to be selected from Gooseberries, Strawberries, Raspberries, Loganberries, Blackberries, Black Currants, Red and White Currants, Raspberries and Red Currants mixed.* [4 entries.]

317 I. (£3.)—MISS J. BLACKBURN, College Square, Stokesley, Yorkshire.
318 II. (£2.)—MRS. M. E. PARLOUR, Croft, Darlington.
320 III. (£1.)—GEORGE WILLIAM WEATHERILL, Belmont, Stokesley, S.O.

Class 682.—*Three Varieties of Fruit, bottled in water, to be selected from Red or Victoria Plums, Yellow Plums, Pears, Apricots, Greengages, Damsons and Cherries.* [7 entries.]

326 I. (30s.)—FREDERICK REEKS, 30 Parkgate, Darlington.
323 II. (20s.)—R. FLETCHER HEARNSHAW, Fox Hill, Burton Joyce, Nottingham.
325 III. (10s.)—MRS. M. E. PARLOUR, Croft, Darlington.
327 R. N.—GEORGE WILLIAM WEATHERILL, Belmont, Stokesley, S.O.

Class 683.—*Six Varieties of Soft Fruit, bottled in water, selected from Gooseberries, Strawberries, Raspberries, Loganberries, Blackberries, Black Currants, Red and White Currants, Raspberries and Red Currants mixed.* [7 entries.]

334 I. (30s.)—GEORGE WILLIAM WEATHERILL, Belmont, Stokesley, S.O.
333 II. (20s.)—MRS. M. E. PARLOUR, Croft, Darlington.
330 III. (10s.)—R. FLETCHER HEARNSHAW, Fox Hill, Burton Joyce, Nottingham.
339 R. N.—MRS. CRESWELL-WARD, Neasham Hill, Darlington.
H. C.—332.

Class 684.—*Rhubarb, bottled in water.* [5 entries.]

337 I. (20s.)—MISS DOROTHY PARLOUR, Waterside, Croft, Darlington.
339 II. (10s.)—FREDERICK REEVES, 30 Parkgate, Darlington.
335 R. N.—MISS MARY BINKS, Croft, Darlington.
H. C.—336.

Class 685.—*Three Varieties of Vegetables, bottled in water, selected from Peas, Broad Beans, Kidney Beans, Asparagus, and Tomatoes.* [3 entries.]

342 I. (30s.)—FREDERICK REEKS, 30 Parkgate, Darlington.
340 II. (20s.)—MISS DOROTHY PARLOUR, Waterside, Croft, Darlington.
341 III. (10s.)—MRS. M. E. PARLOUR, Croft, Darlington.

Wool.[1]

Of 1920 *Clip.*

First Prize, £3; Second Prize, £2: Third Prize, £1; in each Class.

Class 686.—*Three Fleeces of Oxford Down Wool.* [8 entries.]

350 I.—HUGH WILLIAM STILGOE, The Grounds, Adderbury, Banbury, Oxon.
344 II.—HENRY AKERS & CO., Moat House, Black Bourton, Clanfield S.O., Oxon.
346 III.—THE DUKE OF MARLBOROUGH, Blenheim Palace, Woodstock.

Class 687.—*Three Fleeces of Shropshire Wool.* [3 entries.]

351 I. & Champion,[2] & 352 II.—EDMOND CRAIG TANNER, Eyton-on-Severn, Shrewsbury.

Class 688.—*Three Fleeces of Southdown Wool.* [5 entries.]

357 I. & 356 II.—LADY LUDLOW, Luton Hoo, Beds.
358 III.—J. K. WILLIAMSON, Derwin Hall, Corwen.
H. C.—354, 355.

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[1] The Second and Third Prizes in Classes 686 to 703 were given by the respective Flock Book Societies.

[2] Silver Cup given by the British Wool Federation for the best exhibit of Wool in Classes 686 to 707.

Class 689.—*Three Fleeces of Hampshire Down Wool.* [13 entries.]

366 I.—GEORGE PHILIPPI, Crawley Court, Winchester.
364 II.—MAJOR J. A. MORRISON, D.S.O., Basildon Park, Goring, Reading.
359 III.—BRIG.-GEN. H. GRENFELL, Pickwell Manor, Oakham.
H. C.—370, 371.

Class 690.—*Three Fleeces of Suffolk Wool.* [15 entries.]

382 I.—FRANK E. SLATER, Weston Colville Hall, Cambs.
372 II.—THE RT. HON. SIR ERNEST CASSEL, Moulton Paddocks, Newmarket.
378 III.—JOHN R. KEEBLE, Brankam Hall, Manningtree, Essex.
H. C.—375, 386.

Class 691.—*Three Fleeces of Dorset Horn Wool.* [2 entries.]

387 I. & 388 II.—ALFRED READ, Lower Farm, Hilton, Blandford.

Class 692.—*Three Fleeces of Ryeland Wool.* [10 entries.]

397 I. & 398 II.—DAVID J. THOMAS, Talachddu, Brecon, South Wales.
389 III.—CAPT. H. A. CHRISTY, Llangoed, Llyswen, Breconshire.
H. C.—393, 396.

Class 693.—*Three Fleeces of Kerry Hill (Wales) Wool.* [2 entries.]

399 I.—WILLIAM ALDERSON, Glanmiheli, Kerry, Newtown, Mont.

Class 694.—*Three Fleeces of Lincoln Long Wool.* [4 entries.]

404 I.—THOMAS SPINK & SONS, Hunmanby.
401 II.—ANSELL B. HOLT, Home Farm, Sturton Brigg, Lincs.
402 III.—J. W. LEIT, Scagglethorpe Manor, Malton.

Class 695.—*Three Fleeces of Leicester Wool.* [9 entries.]

407 I.—JOHN W. HARRISON, Underpark, Lealholm, Grosmont.
405 II. & 406 III.—GEORGE HARRISON, Gainford Hall, Darlington.
H. C.—410, 411.

Class 696.—*Three Fleeces of Border Leicester Wool.* [2 entries.]

415 I.—R. G. MURRAY & SON, Spittal, Biggar.
414 II.—W. J. GLAHOME, Little Houghton, Lesbury, Northumberland.

Class 697.—*Three Fleeces of Wensleydale Wool.* [10 entries.]

425 I.—JOHN A. WILLIS, Manor House, Carperby.
419 II.—WILLIAM DINSDALE, Low Bolton, Redmire, Yorks.
416 III.—LORD HENRY BENTINCK, M.P., Underley Hall, Kirkby Lonsdale.
418 R. N.—RICHARD CHESTER, Low Moor Farm, Ripon.
H. C.—417, 422.

Class 698.—*Three Fleeces of Kent or Romney Marsh Wool, from Rams of any age.* [6 entries.]

430 I.—J. EGERTON QUESTED, The Firs, Cheriton, Kent.
426 II.—ARTHUR FINN, Westbroke House, Lydd, Kent.
428 III.—THE HADLOW FLOCK CO., Somerhill, Tonbridge, Kent.
H. C.—427.

Class 699.—*Three Fleeces of Kent or Romney Marsh Wool, from Ewe Tegs.* [8 entries.]

434 I.—L. H. & G. W. FINN, Westwood Court, Faversham.
437 II.—WALTER MISKIN, White Hall, Hoo, Rochester, Kent.
433 III.—E. B. DUNSTER, Monypenny House, Rye, Sussex.
H. C.—436.

Class 700.—*Three Fleeces of Kent or Romney Marsh Wool, excluding Rams and Ewe Tegs.* [10 entries.]

444 I. & R. N. for Champion,[1] & 442 II.—L. H. & G. W. FINN, Westwood Court, Faversham.
449 III.—R. STANLEY STROUTS, Singleton Manor, Great Chart, Ashford.
H. C.—447, 448.

Class 701.—*Three Fleeces of Cotswold Wool.* [3 entries.]

451 I.—WILLIAM GARNE, Ablington, Fairford, Glos.
452 II.—FREDERICK NEWMAN, Cold Aston, Bourton-on-the-Water, Glos.
450 III.—COLONEL EDWIN P. BRASSEY, The Manor Farm, Upper Slaughter, Glos.

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[1] Silver Cup given by the British Wool Federation for the best exhibit of Wool in Classes 686 to 707.

Class 702.—*Three Fleeces of Dartmoor Wool.* [3 entries.]

454 I. & 453 II—JOHN H. GLOVER, Delamore Farm, Cornwood, Devon.
455 III.—W. A. JOHNS & SONS, Cleave, Kelly, Lifton, Devon.

Class 703.—*Three Fleeces of Exmoor Horn Wool.* [5 entries.]

460 I. & 459 II.—PERCY SMYTH, Broford, Dulverton, Somerset.
457 III.—DANIEL NICHOLAS PURCHASE, Great Hele Barton, South Molton, Devon.
H. C.—458.

Class 704.—*Three Fleeces of First Cross between Two Distinct Breeds of Short Wool.* [1 entry.]

461 I.—LADY LUDLOW, Luton Hoo, Beds.

Class 705.—*Three Fleeces of First Cross between Two Distinct Breeds of Long Wool.* [3 entries.]

464 I. & 463 II.—ROBERT & JOHN J. PEIRSON, Tanton Farm, Stokesley.
462 III.—JOHN ATKINSON, Wilson House, Barningham, Barnard Castle.

Class 706.—*Three Fleeces of First Cross of any Long and Short Wool.* [4 entries.]

466 I.—R. R. GRIBBLE, Gabriels Manor, Edenbridge, Kent.
468 II.—ROBERT & JOHN J. PEIRSON, Tanton Farm, Stokesley.
465 III.—GREENHILL DAIRY COMPANY, Bingley.
H. C.—467.

Class 707.—*Three Fleeces of First Cross of Pure-bred Sheep, of which one must be Mountain or Moorland.* [7 entries.]

475 I.—JOE K. WILLIAMSON, Derwin Hall, Corwen, North Wales.
473 II.—A. G. RAMSHAY, East Appleton, Catterick.
469 III.—GREENHILL DAIRY COMPANY, Bingley.
H. C.—472.

HIVES, HONEY, AND BEE APPLIANCES.

Class 1.—*Collections of Hives and Appliances.* [1 entry.]

Class 2.—*Best and Most Complete Frame Hives for General Use, unpainted.* [No entry.]

Class 3.—*Most Complete and Inexpensive Frame Hives for Cottager's Use, unpainted.* [No entry.]

Class 4.—*Honey Extractors.* [1 entry.]

The above Classes 1 to 4 were not for competition.

Class 5.—*Any appliances connected with Bee-keeping.* [2 entries.]

[No Award.]

Class 6.—*Comb Honey.*[1] [1 entry.]

63 I. (12*s.* 6*d.*)—MISS HILDA H. EGGLESTONE, Firbeck House, Hutton Avenue, Bishop Auckland.

Class 7.—*Light Extracted Honey.* [2 entries.]

65 I. (12*s.* 6*d.*)—D. E. HARDING, 2 Prospect Terrace, Trimdon, Co. Durham.
64 II. (10*s.*)—MISS HILDA A. EGGLESTONE, Firbeck House, Hutton Avenue, Bishop Auckland.

Class 8.—*Medium Extracted Honey.* [1 entry.]

66 II. (10*s.*)—MISS HILDA A. EGGLESTONE, Firbeck House, Hutton Avenue, Bishop Auckland.

Class 9.—*Movable Comb Hive.*

[No entry.]

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[1] Entries in Classes 6-9 can only be made by members of the Durham County Bee-keepers' Association.

Class 10.—*Comb Honey.*[1] [3 entries.]

7 I. (15*s.*)—J. PEARMAN, Penny Long Lane, Derby.
5 III. (5*s.*)—MISS E. A. BIRKWICK, Kirkby Stephen, Westmorland.

Class 11.—*Extracted Light-coloured Honey.* [4 entries.]

10A I. (15*s.*)—J. PRICE, 165 Corporation Street, Stafford.
8 II. (10*s.*)—J. BIRKETT, Blundells Lane, Rainhill, Lancs
10 III. (5*s.*)—J. PEARMAN, Penny Long Lane, Derby.

Class 12.—*Extracted Medium or Dark-coloured Honey.* [3 entries.]

12A I. (15*s.*)—J. PRICE, 165 Corporation Street, Stafford.
11 II. (10*s.*)—MRS. L. MORGAN, Underwood, Portskewell, Monmouthshire.

Class 13.—*Granulated Honey.* [3 entries.]

13 I. (15*s.*)—J. PEARMAN, Penny Long Lane, Derby.
13A II. (10*s.*—J. PRICE, 165 Corporation Street, Stafford.
14 III. (5*s.*)—W. TRINDER, Edwinstowe, Newark, Notts.

Class 14.—*Comb Honey.*[2] [6 entries.]

15 I. (15*s.*)—G. BRYDEN, 46 Star Hill, Rochester.
17 II. (10*s.*)—MISS E. R. DEBENHAM, Bladen Dairy Farm, Briantspuddle, Dorchester.
18 III. (5*s.*)—W J. GOODRICH, 2 Oxford Street, Gloucester.
20 R. N.—A. WILLMOTT, Lyndhurst, Standstead Abbotts, Herts.

Class 15.—*Extracted Light-coloured Honey.* [11 entries.]

28 I. (15*s.*)—P. J. NORTH, 9 Charles Street, Cambridge.
29 II. (10*s.*)—A. E. WARREN, Old Lane Apiary, Simpson, Bletchley.
23 III. (5*s.*)—G. BRYDEN, 46 Star Hill, Rochester.
26 R. N.—W. J. GOODRICH, 2 Oxford Street, Gloucester.
H. C.—25.

Class 16.—*Extracted Medium or Dark-coloured Honey.* [5 entries.]

34 I. (15*s.*)—W. J. GOODRICH, 2 Oxford Street, Gloucester.
31 II. (10*s.*)—G. BRYDEN, 46 Star Hill, Rochester.

Class 17.—*Granulated Honey.* [3 entries.]

35 I. (15*s.*)—G. BRYDEN, 46 Star Hill, Rochester.
36 II. (10*s.*)—W. J. GOODRICH, 2 Oxford Street, Gloucester.
37 III. (5*s.*)—A. E. WARREN, Old Lane Apiary, Simpson, Bletchley.

Class 18.—*Three Shallow Frames of Comb Honey, for extracting, gathered during* 1920. [6 entries.]

41 I. (15*s.*)—W. J. GOODRICH, 2 Oxford Street, Gloucester.
38 II. (10*s.*)—G. BRYDEN, 46 Star Hill, Rochester.

Class 19.—*Heather Honey.* [2 entries.]

44 I. (15*s.*)—M. J. LAMBOLL, Chiddingfold, Surrey.
45 II. (10*s.*)—J. PEARMAN, Penny Long Lane, Derby.

Class 20.—*Heather Mixture Extracted Honey.* [2 entries.]

46 I. (15*s.*)—MRS. ANDERSON, Old Hermitage Apiary, High Hurstwood, Uckfield.
47 II. (10*s.*)—J. PEARMAN, Penny Long Lane, Derby.

Class 21.—*Best and Most Attractive Displays of Honey.* [1 entry.]

48 I. (25*s.*)—G. BRYDEN, 46 Star Hill, Rochester.

Class 22.—*Exhibits of not less than 2 lb. of Beeswax.* [3 entries.]

51 I. (7*s.* 6*d.*)—MRS. G. SCOTT, The Cottage, Brandesburton, Hull.
50 II. (5*s.*)—J. PEARMAN, Penny Long Lane, Derby.
49 III. (2*s.* 6*d.*)—W. J. GOODRICH, 2 Oxford Street, Gloucester.

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[1] Entries in Classes 10-13 can only be made by residents in Cheshire, Cumberland Derbyshire, Durham, Herefordshire, Lancashire, Leicestershire, Lincolnshire, Monmouthshire, Northumberland, Nottinghamshire, Rutland, Shropshire, Staffordshire, Warwickshire, Westmorland, Worcestershire, Yorkshire, the Isle of Man, Ireland, Scotland, or Wales.

[2] Entries in Classes 14-17 can only be made by residents in Bedfordshire, Berkshire, Buckinghamshire, Cambridgeshire, Cornwall, Devon, Dorset, Essex, Gloucestershire, Hampshire, Hertfordshire, Huntingdonshire, Isle of Wight, Kent, Middlesex, Norfolk, Northamptonshire, Oxfordshire, Somerset, Suffolk, Surrey, Sussex, or Wiltshire.

Class 23.—*Exhibits of not less than 3 lb. of Beeswax.* [4 entries.]

54 I. (7*s.* 6*d.*)—MRS. G. SCOTT, The Cottage, Brandesburton, Hull.
53 II. (5*s.*)—J. PEARMAN, Penny Long Lane Derby.
52 III. (2*s.* 6*d.*)—W. J. GOODRICH, 2 Oxford Street, Gloucester.
54A R. N.—J. PRICE, 165 Corporation Street, Stafford.

Class 24.—*Honey Vinegar.* [3 entries.]

57 I. (5*s.*)—J. PEARMAN, Penny Long Lane, Derby.
56 II. (2*s.* 6*d.*)—W. J. GOODRICH, 2 Oxford Street, Gloucester.

Class 25.—*Mead.* [3 entries.]

59 I. (5*s.*)—W. J. GOODRICH, 2 Oxford Street, Gloucester.
60 II. (2*s.* 6*d.*)—J. PEARMAN, Penny Long Lane, Derby.
58 III. (Certificate of Merit.)—G. BRYDEN, 16 Star Hill, Rochester.

Class 26.—*Exhibits of an interesting nature connected with Bee-culture.* [2 entries.]

62 I. (5*s.*)—W. J. GOODRICH, 2 Oxford Street, Gloucester.

Class 27.—*Exhibits of a scientific nature, not mentioned in the foregoing Classes.*

[No entry.]

HORTICULTURAL EXHIBITION.

Class 1.—*Groups of Miscellaneous Plants.* [4 entries.]

1 I. (£35.)—JAMES CYPHER & SONS, Cheltenham.
2 II. (£30.)—W. A. HOLMES, West End Nurseries, Chesterfield.
3 III. (£10.)—H. H. HILLIAR, Green Park Gardens, Darlington.

Class 2.—*Collections of Orchids.* [2 entries.]

6 I. (£10.)—SIR JOHN SCOTT, Danby Lodge, Darlington.

Class 3.—*Collections of Delphiniums.* [1 entry.]

7 I. (£6.)—BLACKMORE & LANGDON, Twerton-on-Avon, Bath.

Class 4.—*Groups of Tuberous Begonias in Pots.* [1 entry.]

8 I. (£20.)—BLACKMORE & LANGDON, Twerton-on-Avon, Bath.

Class 5.—*Collections of Hardy Perennial Plants and Cut Blooms.* [5 entries.]

10 I. (£25.)—HARKNESS & SONS, Bedale.
9 II. (£20.)—ARTINDALE & SONS, Nether Green Nurseries, Sheffield.
11 III. (£15.)—G. GIBSON & CO., Leeming Bar, Bedale.

Class 6.—*Collections of Cut Sprays of Carnations.* [1 entry.]

12 I. (£8.)—WM. LAWRENSON, LTD., Yarm.

Class 7.—*Collections of Cut Roses.* [1 entry.]

13 I. (£10.)—ALEX DICKSON & SONS, Howlmark, Newtownards, Co. Down, Ireland.

Class 8.—*Collections of Sweet Peas.* [4 entries.]

14 I. (£8.)—E. W. KING & CO., Coggeshall, Essex.
15 II. (£6.)—ALEX. DICKSON & SONS, Howlmark, Newtownards, Co. Down, Ireland.

Class 9.—*Best Collections of Vegetables.* [No entry.]

Exhibits not for Competition.

Large Gold Medals to :—

22 ALEX. DICKSON & SONS, LTD., Howlmark, Newtownards, Co. Down, Ireland.
32 SUTTON & SONS, Reading.
36 WATERER, SON & CRISP, Bagshot, Surrey.

Gold Medals to :—

18 **Allwood Brothers**, Wivelsfield, Haywards Heath.
19 **Wm. Artindale & Sons**, Nether Green, Sheffield
30 **Stuart Low & Co.**, Bush Hill Park, Enfield.
31 **Laxton Bros**, 63, High Street, Bedford.
34 **Toogood & Sons**, Southampton.
37 **H. Lakeman**, Nurseryman, Thornton Heath.
39 **Blackmore & Langdon**, Twerton-on-Avon, Bath.

Silver-Gilt Medals to :—

25 **John Forbes, Ltd.**, Hawick, N.B.
27 **Garden Supplies, Ltd.**, 27, Cranmer Street, Liverpool.
33 **C. H. Tanderin**, Raby Flower Farm, Willaston.
38 **C. Engleman**, Saffron Walden.

Silver Medals to :—

20 **Broadhead & Son**, Thongsbridge, Huddersfield.
23 **W. Edwards, Senr.**, Daybrook, Notts.

24 **H. N. Ellison**. Bull Street, West Bromwich.
35 **Mack & Miln**, Nurserymen, Darlington.

FORESTRY EXHIBITION.

Class 1.—*Specimens of Oak, Elm, Ash, and Beech Timber.* [3 entries.]

3 **Silver Medal.**—Major J. A. Morrison, Basildon Park, Reading,
1 **Bronze Medal.**—The Duke of Marlborough, Blenheim Palace, Woodstock.

Class 2.—*Specimens of Larch, Spruce, and Scotch Pine Timber.* [4 entries.]

5 **Silver Medal.**—Major J. A. Morrison, Basildon Park, Reading.
4 **Bronze Medal.**—The Trustees of Viscount Ridley, Blagdon Hall, Cramlington S.O., Northumberland.
H. C.—7.

Class 3.—*Specimens of any other sort of Hard Wood or Broad-leaved Timber.* [2 entries.]

9 **Silver Medal.**—Major J. A. Morrison, Basildon Park, Reading.
8 **Bronze Medal.**—The Duke of Marlborough, Blenheim Palace, Woodstock.

Class 4.—*Specimens of any other sort of Coniferous Timber.* [2 entries.]

11 **Bronze Medal.**—Manchester Corporation Waterworks Committee, Forestry Department, Thirlmere, Grasmere.

Class 5.—*Collection of Planks of Home-grown Woods.* [1 entry.]

12 **Bronze Medal.**—Major J. A. Morrison, Basildon Park, Reading.

Class 6.—*Specimens of Panels or Boards of various species, polished or unpolished; also home-made specimens of Furniture and other articles grown and manufactured on Exhibitor's Estate.* [2 entries.]

13 **Silver Medal.**—Major J. A. Morrison, Basildon Park, Reading.

Class 7.—*Oak Field Gates for Farm use, to be hung and shown in working order with fastenings.* [4 entries.]

15 **Silver Medal.**—The Duke of Marlborough, Blenheim Palace, Woodstock, Oxon.
17 **Bronze Medal.**—The Trustees of Viscount Ridley, Blagdon Hall, Cramlington S.O., Northumberland.

Class 8.—*Field Gates for Farm use, of any other Home-grown Wood or Combination of Home-grown Woods.* [5 entries.]

20 **Silver Medal.**—Lord Barnard M.C., Raby Castle, Staindrop, Darlington.
21 **Bronze Medal.**—The Trustees of Viscount Ridley, Blagdon Hall, Cramlington S.O., Northumberland.

Class 9.—*Wicket or Hunting Gates.* [3 entries.]

24 **Silver Medal.**—Lord Barnard, M.C., Raby Castle, Staindrop, Darlington.
H. C.—26.

Class 10.—*Tree Guards.* [No entry.]

Class 11.—*Fencing, of Home-grown Wood and made in Great Britain.* [1 entry.]

27 **Bronze Medal.**—Lord Barnard, M.C., Raby Castle, Staindrop, Darlington.

Class 12.—*Fencing of Foreign Timber.* [8 entries.] [No award.]

Class 13.—*Specimens showing comparative quality of any Timber grown on different soils and situations, and the respective ages at which it reaches marketable size and maturity.* [No entry.]

Class 14.—*Specimens of Stems, and Boards cut from them, not exceeding 6 ft. in length, illustrating the effects of dense and thin crops in branch suppression and quality of timber.* [No entry.]

Class 15.—*Nurserymen's Competition for the best exhibit of rarer Specimen and Ornamental Trees.* [No entry.]

Articles for exhibition only.

36—42 **Special Medal.**[1]—FORESTRY COMMISSION, PER R. W. HUNTER, ESQ., Armstrong College, Newcastle-on-Tyne.
61 **Silver Medal.**—ENGLISH FORESTRY ASSOCIATION.
74 **Silver Medal.**—JOHN PATTEN, JUNR., Hulne Park, Alnwick.
75 **Silver Medal.**—JOSEPH HARRIS, Brackenburgh Tower, Carlisle.
60 **Bronze Medal.**—THE DUKE OF WELLINGTON, K.G., Stratfieldsaye, Hants.
62—67 **Bronze Medal.**—WELLMAN BROS. & CO., 42 Peascod Street, Windsor, Berks.
68 **Bronze Medal.**—WILLIAM SHEPHERD & SONS (Kendal), LTD., Westmorland Handle Works, Kendal.
69—70 **Bronze Medal.**—JOHN C. ARCHIBALD, Askham, Penrith.
71—73 **Bronze Medal.**—J. J. CALDER, Calder House, Piccadilly, W.
78 **Bronze Medal.**—JOHN MAUGHAN, Jervaulx Abbey, Middleham, Yorks.
79 **Bronze Medal.**—LITTLE & BALLANTYNE, Carlisle.

PLANTATIONS COMPETITIONS.

Restricted to Durham, Northumberland, Westmorland, Cumberland, and the North Riding of Yorkshire.

Plantations must not be of less than ten years' growth.

STAGE A.—Plantations which have been weeded or lightly thinned, including the removal of dead or dying trees.

STAGE B.—From the end of STAGE A up to the completion of the second thinnings.

HARDWOODS as final crop. To be not less than 4 acres in extent.

Class 1, Stage A.

(No entry).

Class 2, Stage B.

(No entry).

CONIFERS. To be not less than 4 acres in extent.

Class 3, Stage A. [5 entries.]

Silver Medal.—MANCHESTER CORPORATION WATERWORKS COMMITTEE, Forestry Department, Thirlmere, Grasmere.
Bronze Medal.—W. L. CHRISTIE, Jervaulx Abbey, Middleham, Yorks.

Class 4, Stage B. [7 entries.]

Silver Medal.—LORD BARNARD, M.C., Raby Castle, Staindrop, Darlington.
Bronze Medal.—THE HON. W. H. C. BEAUMONT, Dilston Hall, Corbridge-on-Tyne.

Class 5.—*Best examples showing systematic management of existing Woodland area including the renovation and conversion of an unprofitable wood into a profitable condition.* [5 entries.]

Silver Medal.—W. L. CHRISTIE, Jervaulx Abbey, Middleham, Yorks.
Bronze Medal.—COL. GERARD F. T. LEATHER, Middleton Hall, Belford, Northumberland.
H. C.—JOSEPH HARRIS, Brackenburgh Tower, Carlisle.

Class 6.—*Plantations of not less than 2 acres consisting of Douglas Fir, Sitka Spruce, Japanese Larch, Corsican Pine, or any other rarer conifer, pure or mixed, of not less than five or more than thirty years' growth.* [7 entries.]

Silver Medal.—W. L. CHRISTIE, Jervaulx Abbey, Middleham, Yorks.
Bronze Medal.—COL. GERARD F. T. LEATHER, Middleton Hall, Belford, Northumberland.

---

[1] Special Medal given by the Royal Agricultural Society of England for the best general Collection of Exhibits in the Competitive and Non-Competitive Sections.

Class 7.—*Best managed woodland estates, not less than* 1,000 *acres in area.*
[3 entries.]

Special Medal.—COL. GERARD F. T. LEATHER, Middleton Hall, Belford, Northumberland.

Silver Medal.—LORD BARNARD, M.C., Raby Castle, Staindrop, Darlington.
Bronze Medal.—JOSEPH HARRIS, Brackenburgh Tower, Carlisle.

Gold Medal, given by the Royal English Arboricultural Society for the best plantation to MANCHESTER CORPORATION WATERWORKS COMMITTEE, Thirlmere, Grasmere.

ESTATE NURSERIES COMPETITIONS.

[7 entries.]

Silver Medal.—JOSEPH HARRIS, Brackenburgh Tower, Carlisle.
Bronze Medal.—MANCHESTER CORPORATION WATERWORKS COMMITTEE, Forestry Department, Thirlmere, Grasmere.
H. C.—EARL OF DURHAM, K G., Lambton Castle, Fence Houses, Durham.

IMPLEMENTS.

Miscellaneous Implements.

Silver Medals for articles entered as "New Implements for Agricultural or Estate Purposes."

596 DAIRY SUPPLY CO., LTD., Museum Street, London, for Recording Thermometer.
1095 A. C. BAMLETT, LTD., Thirsk, for Potato Digger, "Bamlett."
2993 BAMFORDS, LTD., Uttoxeter, for Oil Engine, "The Bamford"
3364 N. V. MACHINEFABRIEK "DE POL," Zutphen, Holland, for Threshing Machine.
3370 & 3372 PHIPPS & SONS, Chippenham, for Self-Lift arrangement applied to plough or cultivator.

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Printed in Great Britain by Butler & Tanner, *Frome and London*

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Royal Agricultural Society of England.

FORM OF APPLICATION FOR MEMBERSHIP.

I ....

of ....

....

....

County in which Residence is situated ....

am desirous of becoming a {*Member* / *Governor*} *of the* **Royal Agricultural Society of England,** *and engage, when elected, to pay the Annual Subscription of* £† .... *and to conform to the Rules and Regulations of the Society until the termination of the year in which I shall withdraw from it by notice, in writing, to the Secretary.*

(*Signature*) ....

Date ....

Nominated by ....

Elected at the Council Meeting held on ....

.... *Secretary.*

† The Council trust that all Members who are disposed to give a larger annual Subscription than the minimum of £1 prescribed by the By-laws will be kind enough to do so, in order that the Society's operations may be maintained.

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The Society holds every year an Exhibition of Live Stock, Farm Produce, and Implements, to which and to the unreserved portions of the Grand Stands at the Horse Ring, Dairy, and elsewhere, Members are entitled to free admission.

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The Annual General Meeting of Governors and Members is held in London in the month of December, during the week of the Smithfield Club Cattle Show. A Meeting is also held in the Society's Showyard in the summer.

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The Annual Subscription of a Member is payable in advance on the 1st January of each year. Every candidate for admission into the Society must be proposed in writing by an existing Member. Forms of proposal may be obtained on application to the Secretary, at 16 Bedford Square, London, W.C.1.

SPECIAL PRIVILEGES OF GOVERNORS.

In addition to the privileges of Members, as described above, Governors are entitled to an extra copy of each Volume of the Journal, to attend and speak at all meetings of the Council, and are alone eligible for election as President, Trustee, and Vice-President. A Governor also receives a Silver-Gilt Badge admitting him to the Show and to the Council and Governors' Rooms. The minimum Annual Subscription of a Governor is £5, with a Life Composition of £50.

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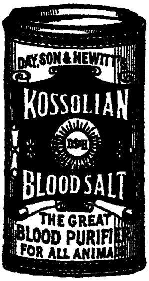
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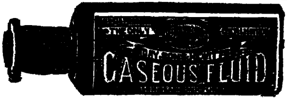

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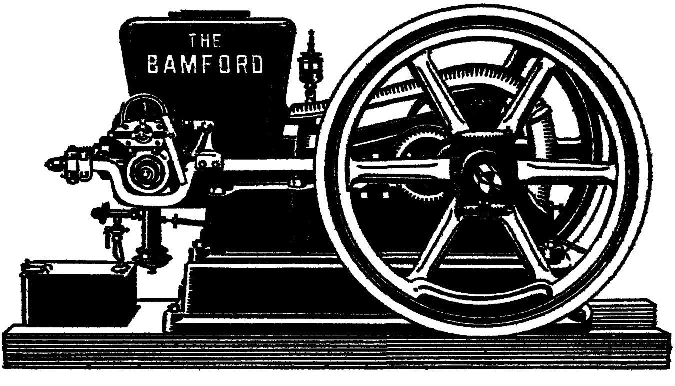

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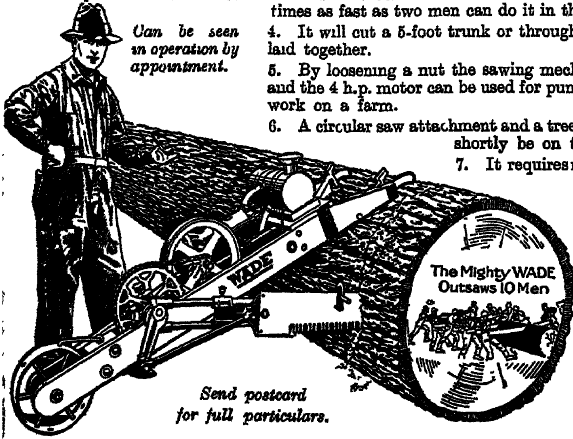

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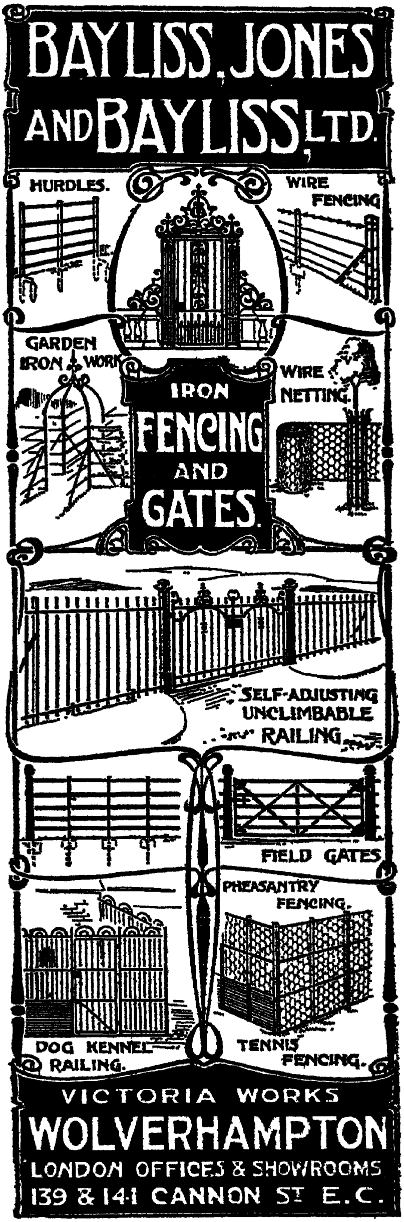

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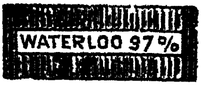

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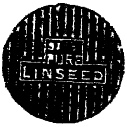

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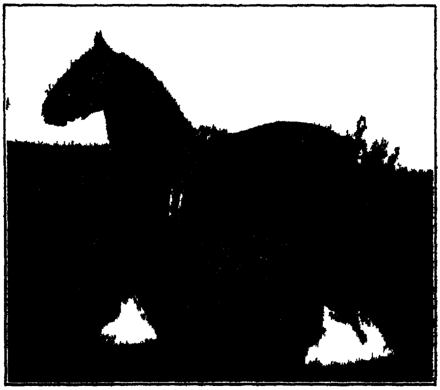

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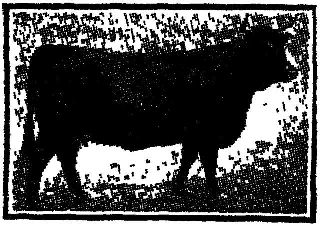

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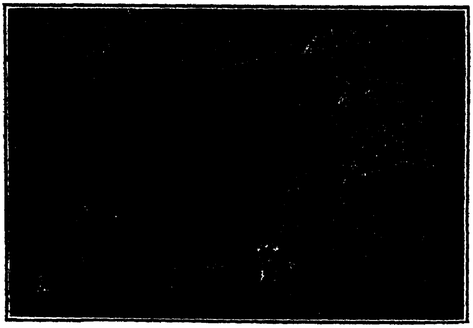

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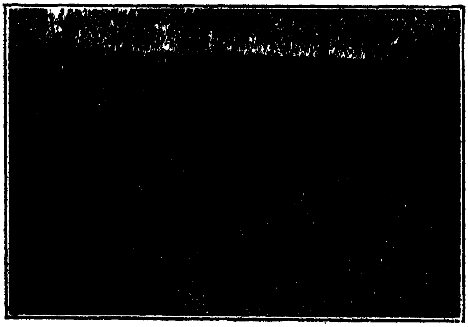

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Last 8 Sires used in this Herd were all from 1,000 GALLON COWS on BOTH SIDES, viz.—

Hindlip Butterman .	dam **1100** gals. ;	Sire's g'dam **920** gals.
Waterloo Senator .	dam **1104** gals. ;	Sire's dam **844** gals.
Imperial Furbelow .	dam **956** gals. ;	Sire's dam **1232** gals.
Waterloo King . .	dam **1184** gals. ;	Sire's dam great dairy winner.
Kelmscotonian 39th .	dam **1128** gals. ;	Sire's dam **1102** gals.
Darnley . . .	dam **1009** (av.) ;	Sire's dam **995** gals.
Reformation . .	dam **1187** gals. ;	Sire's dam great dairy winner
Rattler . . .	dam **924** gals. ;	Sire's dam **1009** gals.

This consistent Fine Milk Breeding MUST TELL and owners of Dairy Herds have the chance of obtaining it by using one of the Lea bred Bulls.

BULLS, COWS AND HEIFERS FOR SALE.

For Prices, Pedigrees, etc., apply:

E. GOODWIN PREECE, CROSS HILL HOUSE, *near* SHREWSBURY.

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Old Established Herd of DUAL PURPOSE MILKING SHORTHORNS. Flock of OXFORD DOWN SHEEP and STUD OF SHIRE HORSES.

Established over 40 Years.

The Property of R. W. HOBBS & SONS, Kelmscott, Lechlade, Glos.

4-Year Old In-Calf Cow, HELPMATE 18th
Bred by Messrs. Hobbs. Sire, M.C. 25th dam, Helpmate 11th.
(twice First at the Royal Show as a Dairy Cow).

Herd of 500 Dairy Shorthorns. Milk Records kept. Numerous prizes won for Inspection, Milking and Butter Tests. The Gold Medal, "Spencer" and "Shirley" Challenge Cups were won at the London Dairy Show in 1914. The Fifty-guinea Challenge Cup for the Best Group of Dairy Shorthorns was won at Darlington for the fifth successive Royal Show. Bulls and Bull Calves always on Sale. Four-cross Bull Calves at moderate prices, suitable for non-pedigree dairy herds, a specialty. All the Cows in Milk and the Stock Bulls have passed the Tuberculin Test.

OXFORD DOWN FLOCK. One of the oldest and largest Flocks of Registered Oxfords in the country. Prizes won at the Royal Shows for many years. Rams, Ram Lambs, and Ewes on Sale. Rams sold annually at Oxford, Kelso, and Northampton Ram Fairs.

KELMSCOTT STUD OF SHIRE HORSES.—Sound active Colts and Fillies on Sale. Stud Stallions include **Monks Green Clansman (34170), Royal Warrior** and **Kelmscott Centre Half**, all from grand sound mares and sired by the well-known sires Champion Clansman, Abbot's Royal Blood and Champion Goalkeeper respectively.

GLOUCESTERSHIRE OLD SPOTS PIGS.—The Herd is founded on the most reliable and fashionable strains. "Dinedor Lawless," purchased for 200 guineas at Capt. Hamilton's sale, follows "Woodstock King," winner of 2nd prize Royal Counties Show, Reading, 1920. Young Boars and Gilts for private Sale.

LIMITED. Station: KELMSCOTT, 2 Miles. Telegrams: HOBBS, LECHLADE.

The Elfordleigh Guernsey Herd

The Property of Mrs. R. C. BAINBRIDGE, Elfordleigh, Plympton, S. Devon.

GUERNSEY COW "ELFORDLEIGH ROMA" 12043

Dam, Romula of Glynn 7078 Sire, Royalty 9th 2848

Born Feb. 4th, 1916. Gave 8,604 lbs. Milk, 4·7 Butter Fat as a 2-year old.
First and Champion at Truro Show, 1919, and Reserve at Cardiff, 1919.

Winner of Butter Test, Bath and West Show, May 1920, Making 2 lbs. 4¼ ozs. Butter.

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BASILDON PARK PEDIGREE STOCK.

THE PROPERTY OF

MAJOR J. A. MORRISON, D.S.O.

Scotch Shorthorns (Annual Sale, Sept. 8th). Aberdeen Angus and Red Poll Cattle. Berkshire and Tamworth Pigs (Annual Sale in April). Hampshire Down Sheep (Annual Sale, of Ram Lambs, Draft Ewes and Ewe Lambs, July 21st, 1921).

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Young Stock, which can be viewed by appointment, always for Sale.

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Aske Dairy Shorthorn Herd.

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THE HERD consists of long pedigree families of a dual purpose type carefully bred and selected for milk and constitution. The Stock Bulls now in use are Tockenham Baron 145933, whose dam, Waterloo Baroness 2nd, has averaged 10,363 lbs. Milk for 7 years, and Royal Roger (Vol. 66), a Seraphina bred bull whose dam gave 6,138¾ lbs. Milk as a heifer.

Daily Milk Records kept and inspected. - - *Young Bulls for Sale.*

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The Weeley Herd—Founded on Champion Strains. Farrowed in the open and reared on arable forage crops. Young gilts and boars always for sale at commercial prices

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Highest Class Trapnested Laying Strains. White Wyandottes, White Leghorns, Light Sussex, White Orpingtons, White La Bresse, White Runners

SITTINGS OF 15 EGGS - - 15/-
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DAY-OLD CHICKS, per doz. - 30/-
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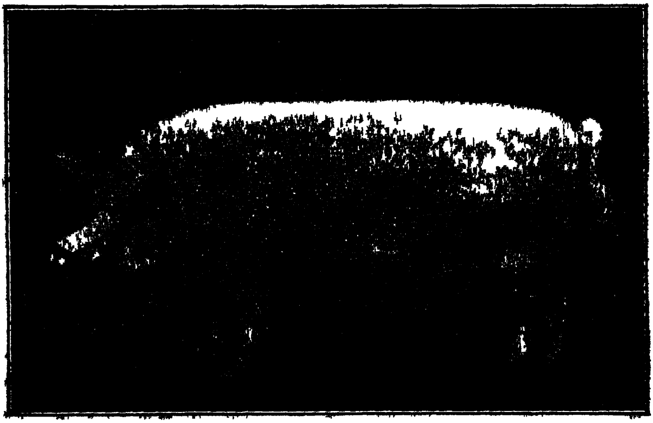

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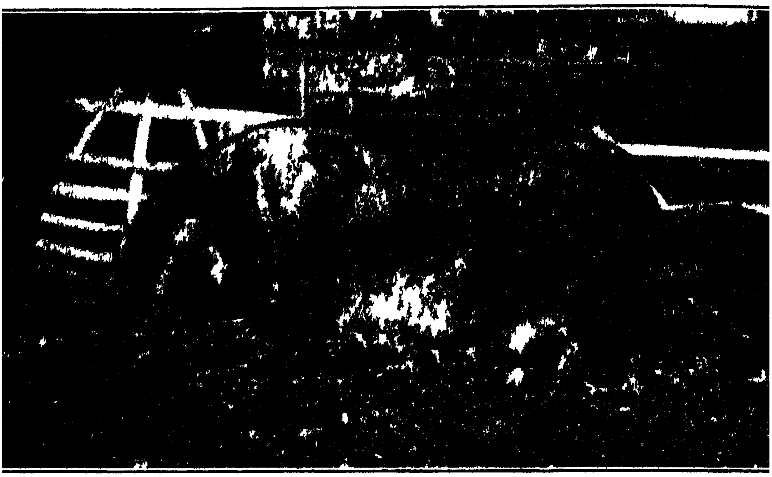

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Gilslake Duke 156. 3rd prize boars farrowed in or before 1917, Royal Show, Cardiff, 1919.

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Several well-known lines of breeding amongst the sows used.
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HORSES—*continued.*

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CRIDLAN, J. J., MAISEMORE PARK, GLOUCESTER. Stock Bull: Idyll of Maisemore (36219), First Prize winner and Reserve Champion R.A.S.E. 1915, George R. of Ballindalloch (30611). The Herd has won 216 First and 141 Second Prizes, 30 Gold, 43 Silver Champion Medals, Smithfield Championships 1910, 1914, 1916, 1920, Reserve Championship 1903 and 1915; final winner of King Edward VII.'s £105 Challenge Cup 1914; awarded Championships, Norwich 1907, 1910, 1911, 1912, 1915, Ipswich 1911, 1912, 1914, York 1912.

GORTNASKEHY ABERDEEN-ANGUS HERD. Select herd of fashionable families. Young Bulls and Heifers usually for sale. David M. Rattray, Gortnaskehy, Ballybunion, Co. Kerry, Ireland.

CATTLE—*continued.*

Scott, C. T., Buckland Manor, Broadway, Worcestershire. Stock Bulls: Etrurian of Bleaton, Champion Royal and Highland Shows, 1919 and 1920; Proud George, First and Reserve Champion, Royal, 1919; Champion, Bath and West, 1920. Young Bull for sale. Apply, Day, Manager.

Theakston Aberdeen-Angus Herd. Founded 1883. 100 head registered Cattle. Yearling Bulls and Heifers for sale. Ballindalloch Sires. Owner, J. McIntyre, Theakston, Bedale, Yorkshire.

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Ayrshire Cattle. Reputed largest pedigree herd in England. Inquiries invited for Bull and Heifer Calves all closely related to winners in inspection classes at Royal, Highland, Ayr, Kilmarnock, and milk yield classes at Royal. Wm. Gibson, Carrick House, Ellesmere Park, Eccles, Lancs.

British Friesians.

Chillingworth, A. F. and Sons, Highworth, Wilts. Reddown British Friesians, Herd of 70 head. Bull calves and stock on sale by Wychnor YME (pure imported), and Reddown (imported) MURK, from heavy milking dams. Official Records.

Horace Hale, Findon, Worthing, Sussex, winner of first prize in South-Eastern Counties Dairy Herd Competition, over 100 entries of all dairy breeds competing. The whole herd, including twelve first-calf heifers, averaged over 1,000 gallons milk in 1919 and 1920 Stock Bull: Hedges Second Series (6427), P.I. whose seven nearest dams averaged 1,328 gallons milk in one lactation.

Hughes, James E., Lea Hall, Mollington, near Chester. British Friesian cattle. Winner with bull, Bulkeley Klaske's Ceres of First Prize and Championship R.A.S.E., 1920; First Prize Chester, 1920; First Prize and Silver Medal, London Dairy Show, 1920.

Knebworth Herd of British Friesian Cattle. Topnote for milk, size, type and fashionable breeding. We invite inspection. Apply, W. and R. Wallace, Knebworth Station, Herts. Station: Knebworth, G.N.R. (25 miles from King's Cross). Telephone: 34 Knebworth. Telegrams: Wallace, Knebworth Station.

Langley British Friesians. Best strains. High-class young Bulls usually for sale, by imported bulls; also three-quarter imported breeding. Official milk records. First prizes recently won in show ring. Stock Bull: Routh Dutchman (P.I.). Approved cows accepted. Preston Jones, Langley, Winchcombe, Glos.

CATTLE—*continued.*

Neame, Frederick, Macknade, Faversham, Kent. Pedigree British Friesians. Herd established in 1889 with imported stock. Milk records kept for over thirty years. Cow's lactations completed in 1920 averaged 1,016 gallons.

Peart, James, Ltd., Woodhall, Hatfield, Herts, Breeders, Ludwick Herds of Pedigree British Friesian Cattle, Berkshire and Wessex Pigs. Telephone: Hatfield, 75. Telegrams: Peart, Hatfield, Herts.

Wordsworth, Christopher, Brooklands, South Godstone, Surrey. British Friesian Cattle. Herd contains three fully imported animals. Several 1,000 gallon cows; official records. Stock Bull: (Imported) Tredegar Wychnor Yme. Station: Godstone, S.E.R. Telegrams: South Godstone.

Guernseys.

Ferrand, G. F., Morland Hall, Alton, Hampshire. Milk records carefully kept. Some of the best Island blood can be obtained here. Four different cows from this Herd have won the Senior Cow class in 1920 at the following Shows: E.G.C.S. Show, Devon County, R.A.S.E. and N.E. Hants.

Pedigree Herd Prize-winning Guernseys, bred from Island strains. Bulls and Heifers for sale. Mrs. R. C. Bainbridge, Elfordleigh, Plympton, South Devon.

Sayer, Major, Platnix, Westfield, Sussex. Pedigree Guernsey Cattle, Good young Cows and Heifers for Sale. Telegrams: Westfield, Sussex. Station: Battle.

Herefords.

Bibby, Frank, Hardwicke Grange, Shrewsbury. Prize-winning Herefords, male and female, always for sale and export. Also Scotch Shorthorns, finest strains. Apply, Bailiff, Hardwicke Grange, Home Farm, Hadnall, Shrewsbury.

Mason, F. Ffitch, The Faraam, Killay, Glamorgan. Breeder and exhibitor of high-class Herefords. Eligible for all records.

Pyman, Sydney, Pigeon House, Ross-on-Wye, Herefordshire. Pedigree Hereford Cattle. Heifers and Bulls generally for sale.

Shucknall Court Herefords. Owner, Henry Moore, Shucknall, Hereford. Breeder of many Royal and other show winners. Inspection cordially invited.

Walker, John, Knightwick Manor, Worcester. Hereford Cattle. Prizes won at all the leading shows, 1920. Young Bulls and Heifers on sale. Eligible for all records.

CATTLE—*continued.*

Jerseys.

Cowdray Park Jersey Herd, property of Major the Hon. Harold Pearson. Numerous prizes and awards in inspection, milk yield and butter test classes, including three champion prizes at the Royal Shows, 1919–1920. Well-bred young bulls, heifers and cows often for sale. No objection to tuberculin test. Address, The Agent, Cowdray Estate Office, Midhurst.

Henderson, Hon. Lieut.-Col. H. G. Pedigree Jersey Herd. Apply, Walter Crosland, Estate Office, Buscot Park, Faringdon.

Hough, S. G., Springhouse Park, Theydon Bois, Essex. Government Milk Record Stock. Young Stock by late stock Bull Bowlina's Lad (12853) by The Cid ex Princess Bowlina who won Goddington First Prize and Milk Yield First Prize Jersey, 1919. Herd also includes prize-winning cows.

Watson-Kennedy, Mrs., Wiveton Hall, Norfolk, Holt Station. Pedigree Jerseys. Milk Records kept. All cows have passed tuberculin test. Bulls and cows for sale. Write James Kemp, Herdsman.

Jerseys and Guernseys.

Fowler and de la Perrelle, Porter's Lane, Southampton, the largest importers of Jerseys and Guernseys. Cows and heifers calving all the year round. Bulls of the best strains. No objection tuberculin test. Moderate prices. Shipping attended to. Telegrams: Importers, Southampton.

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Kerries and Dexters.

Braishfield Manor Herd of Dexter Cattle. Prizes won 1915 include championship R.A.S.E., Nottingham, first London Dairy Show. Apply, Mr. W. G. Owen, Elmgrove, Braishfield, Romsey.

Joyce, Walter (Rev.), Charles Parsonage, South Molton, Devon. Large Herd Pedigree Dexters. Bulls, Cows, Heifers, home-bred. Not dealer. Honours, Royal Showyard.

Palmer, Captain Richard Elliott. The O.P.H. (Registered prefix), Oaklands Park Herd, Newdigate, Surrey. Pure Pedigree, Registered Kerry Cattle, prize-milking, butterfat, record strains, type, breeding. Apply, The Foreman.

CATTLE—*continued.*

Red Polls.

Bredfield House Herd of 50 Pedigree Red Polls. Property of J. H. Lachlan White, Esq. Heifers and Bulls bred from prize stock always for sale. Address, Bredfield House, Woodbridge, Suffolk.

Brown, Thomas & Son, Marham Hall, Downham, Norfolk. Herd established 64 years. Powell strains predominate. Large number of prizes won, including, in 1920, Male Championship for the second successive year and Reserve Female Championship at the R.A.S.E., both Male and Female and Reserve Female Championship, Suffolk, and in addition eleven firsts, and six other prizes at five summer shows. Daily Milk Records kept. Stock of all ages for sale.

Munnings, W. G., The Rookery, Weybread, Harleston, Norfolk. Mendham herd Red Polls bred for milk. Rendlesham, Gressenhall, Shotford blood. Average for mature cows in herd, 9,103½ lb. Stock for sale.

Shorthorns.

Annaly, Lord, Holdenby House, Northants. Stock Bull used, Thornby Linksman. Prizes won 1920 2nd and Reserve Champion R.A.S.E. Show, Darlington. 1st D.S.A. Prize Derbyshire Show. Reserve London Dairy Show. Station: Althrop Park. Telegrams: Holdenby.

Aske Herd Pedigree Dairy Shorthorns (the property of the Marquis of Zetland) consists of long pedigree families of a dual-purpose type, carefully selected and bred for milk and constitution. Daily milk records kept and inspected. Bulls for sale. Apply, F. W. Hall, Olliver, Richmond, Yorkshire.

Barton, Bertram H., Straffan, Co. Kildare, Ireland. Pedigree Shorthorns. Large old-established herd Cruickshank on Booth foundation. Prize-winners; good milkers; sound constitution.

Brundrett, Walter, Lacton Hall, Willesborough, Kent. Pedigree Scotch Shorthorns chiefly of Bilsington blood. Kent or Romney Marsh Sheep, Flock No. 226. Large Black Pigs. Station: Ashford, S.E.C. Ry.

Cherry, Matthew, Lomond, Myroe, Co. Derry, Ireland. Breeder of Scotch Shorthorn Cattle. The families in herd comprise: Violet, Lavender, Secret, Butterfly, Broadhooks, Augusta, Eliza, Golden Drop, Rosebud, Lady Dorothy, Charlotte Corday,

CATTLE—*continued.*

Bessie, Ury Maid, Clara, Marigold, Maria, Matilda, Rosemary, Princess Royal and Orange Blossom. Stock Bulls: Scotch, Stamp, A Secret, bred at Uppermill, and Balcairn Boy, bred by F. L. Wallace, Esq.

Chillingworth, A. F., & Sons, Highworth, Wilts. Herd of 120 typical Dairy Shorthorns. Bull calves and stock excellently bred for milk for sale. Official records. Stock Bulls: Primrose Duke by Dreadnought, dam Primrose 3rd (dam of Elsie Foggathorpe); Kelmscott Freemason 61st by Cranford Freemason, dam Lovely 69th. Both sires, 1,000 gallons milk each side.

Chivers & Sons, Ltd., Histon, Cambs. Pedigree Dairy Shorthorn Herd, composed of Bates and other old English families. Daily milk records checked by D.S.A., and Ministry of Agriculture Recorders. Bulls and Bull Calves for sale.

Edge, S. F., Pedigree Scotch Shorthorns. Augusta, Broadhooks, Butterfly, Clippers, Lancasters, Missie. Constitution and good breeding, powers encouraged by ample fresh air and exercise. Young Bulls and Heifers generally available for sale. Inspection welcomed. Gallops, Homestead, Ditchling, Sussex.

Graham-Clarke, J. E. H., Frocester Manor, Gloucestershire. Scotch Shorthorn Cattle from Augusta, Miss Ramsden, Broadhooks, Charlotte Corday families. Young Bulls for sale.

Henderson, Hon. H. G., Lt.-Col. Pedigree Shorthorns of deep-milking strains. Bulls and Bull Calves for sale. Mr. Walter Crosland, Estate Office, Buscot Park, Faringdon.

Hobbs, Robert W., & Sons, Kelmscott, Lechlade, Glos. Herd of 500 Dairy Shorthorns; founded in 1877. One of the oldest and largest pedigree herds in existence. Milk, flesh, and constitution studied. Daily Milk Records kept. Numerous prizes won for Inspection, Milking Trials, and Butter Tests. The Fifty Guinea Challenge Cup for the best group of Pedigree Dairy Shorthorns was won at Darlington last year for the fifth successive Royal Show. Bulls and Bull Calves on sale, with prices to suit all buyers. Four Cross Bull Calves at moderate prices, suitable for non-pedigree dairy herds, a speciality. All the cows in milk, and the bulls have passed the Tuberculin Test. Station: Kelmscott, 2 miles. Telegrams: Hobbs, Kelmscott.

Kirk, Thomas, Abbey Mains, Haddington, East Lothian. Shorthorn Cattle. Many of the best Cruickshank families are represented in this Herd, viz.: Broadhooks, Princess Royals, Nonpareils, Butterflies, Goldies, Duchess, Clippers, Bessies, etc.

CATTLE—*continued.*

Law, Messrs., Mains of Sanquhar, Forres. Select Herd Scotch Shorthorns. Young Stock for sale. Herd always on view by appointment. Telegrams: Law, Sanquhar, Forres.

Lousley, Edward Burghfield, Reading. Pedigree and Non-Pedigree Dairy Shorthorns. Average yield, 1919–20, 8,382 lb. Cows, Bull Calves and Young Stock for sale.

McWilliam, R. S., Garguston, Muir of Ord, Ross-shire. The Shorthorn Herd is composed of well-known Scotch strains, including the following: Augusta, Butterfly, Clipper, Sittyton Crocus, Goldie, Mysie, Rosebud, and Sittyton Violet. Bulls and Heifers generally for sale.

Roberts, Edward A., Wirral Manor House, Clatterbridge, Birkenhead. Dual-purpose Shorthorn Cattle, Coates' Herd Book. A few choice specimens at any time for disposal. Milk recorded. Station: Spital. Telegrams: Bebington.

Robinson, J. and H., Iford, Lewes, Sussex. Select herd of Pedigree Dairy Shorthorns; milk records kept. Best Bates blood. Young Bulls for sale, whose dams and sires' dams are heavy-milking cows with well-shaped udders and sound constitutions. Telegrams: Robinson, Iford, Lewes. Telephone: 114 Lewes. London, 50 miles; Brighton, 8 miles.

Stratton, Richard, The Duffryn, Newport, Mon. Oldest-established Shorthorn herd in the kingdom, milk and flesh combined. Bulls and Heifers for sale.

Thornton, Frank H., Kingsthorpe Hall, Northampton. Pedigree Dairy Shorthorns. Winner of many prizes, including First Prize Milking Trials, Royal Show, 1911, and First Prize Heifer Milking Class and Breeders' Silver Medal, Dairy Show, 1915. Breeder of First and Champion Bull, Royal Show, 1919.

Weigall, Lt.-Col. Sir A. G., K.C.M.G., "Petwood," Woodhall Spa, Lincs. Pedigree Lincoln Red Shorthorns. Dual-purpose Cattle kept. Prizes won: Royal Lincs., County, Peterborough, Oakham, Boston, Alford, London Dairy Show and Smithfield. Apply, Agent, Estate Office. Station: Stixwould. Telegrams: Woodhall Spa.

Welbeck Herd of Pedigree Shorthorns, the property of the Duke of Portland. Young Bulls and Heifers for sale from the best strains. Apply, Alex. Galbraith, Norton, Cuckney, Mansfield.

Winkhurst Herd, the property of A. H. L. Bohrmann, Esq., Winkhurst Green, Ide Hill, Sevenoaks, Kent. Pedigree Shorthorns, dual-purpose type, long pedigrees only. Inspected milk records. Nearest Station: Penshurst, 2½ miles.

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REPORT OF THE CONSULTING CHEMIST.

1. BASIC SLAG BELOW GUARANTEE.

The following case shows how, although a purchaser may have taken all reasonable precautions for being supplied with Basic Slag of guaranteed good quality, he may yet find himself—unless he subsequently secures himself by having an analysis made of the delivery—supplied with a much inferior article.

A member of the Society, resident in Dorsetshire, received on January 6, 1921, an offer from Messrs. Wilkins & Co., Agricultural Merchants, Salisbury, of 30 per cent. Basic Slag at 124s. 6d. per ton net cash, carriage paid. He accepted this for 4 tons and duly received the delivery with invoice thus:

1921, Jan. 15. 4 tons Basic Slag 128/6 . . . . . £25 14s.

"26/28 per cent. Total Phosphates" being stated on the invoice.

On a sample being sent to me for analysis, this was found to contain only 18·35 per cent. of total phosphates. The purchaser complained and offered to draw a fresh sample in the presence of the vendors' representative. This was done, the result showing 19·18 per cent. of total phosphates

The vendors expressed their regret and asked for the 4 tons to be returned to them.

On making further inquiries it was found that Messrs. Wilkins had obtained the Basic Slag from the General Distributing Agency, Baltic Wharf, Southampton, the quality being known as "The Baltic Brand" This had been invoiced by the latter firm to Messrs. Wilkins as "24/26 per cent."

It would thus appear that the General Distributing Agency were responsible for sending out a delivery of Basic Slag 5 to 7 per cent below the guarantee, and Messrs. Wilkins were answerable, in their turn, for invoicing the Basic Slag at figures 2 per cent. above those upon which it had been invoiced to them, the purchaser ultimately getting only 18–19 per cent. Basic Slag and being charged for it at the price of 26–28 per cent. material.

2. "FERTILITE."

A member sent me on March 8, for analysis, a sample of a material sold under the above name and manufactured by the Worcestershire Fertilizer Co., Wholesale Depôt, Crescent, New Road, Bromsgrove.

This cost £15 per ton and was stated to be "more than a Food," but also "a Tonic and Invigorator." With it was given a guaranteed analysis. This, and the results I obtained, were as follows :—

	Guarantee per cent.	*Found per cent.*
Phosphates	17	7·27
Nitrogen	4	2·80
Ammonia	4·85	3·40
Potash	2·7	·35
Sulphate of Potash	5	·64

It will be seen that my analysis differed widely from the guaranteed one, and the price, were the material to be considered as a manure, was quite three times what it should have been.

I found, moreover, that the material contained a quantity of different metals, among which were iron filings, lead, aluminium and copper, while it also contained other objectionable constituents.

3. CASTOR-OIL BEAN MEAL SOLD AS PALM KERNEL MEAL.

A sample sent me by a member living in Surrey, and purchased as "Palm Kernel Meal," gave the following analysis :—

Moisture	9·85
Oil	1·13
Albuminoids	26·37
Carbohydrates, etc.	27·58
Woody fibre	29·42
[1]Mineral Matter	5·65
	100·00
Nitrogen	4·22
[1]Including Sand	1·19

This sample, it will be seen, was oil-extracted and of poor quality; it contained a very excessive amount of fibre, inasmuch as genuine Palm Nut Meal seldom has above 15 per cent. of this. Moreover, the analysis, as regards albuminoids, was very different to that of Palm Nut Meal. On microscopical examination the material was found to be not Palm Nut Meal at all, but oil-extracted Castor-oil Bean Meal with which some Wheat Meal was mixed. After feeding on the meal, a valuable sow died, and the owner made a claim in consequence.

The meal had been purchased from a local firm who had it supplied to them by Messrs. William Lillico & Son, Croydon, it being invoiced as "Palm Kernel Meal" at £9 10s. per ton, 1 per cent. oil, 18 per cent. albuminoids.

4. Shoddy sold without Proper Guarantee.

A member of the Society ordered, in March, from a Yorkshire firm who dealt in waste products, 7 tons of Shoddy at 65s. per ton, f.o.r.

A sample of this, when submitted to me, gave Nitrogen 4·87 per cent. The price charged, moreover, was not too high. But there was no proper guarantee given on the invoice, such as is required by the Fertilisers and Feeding Stuffs Act. In place of this the following statement was printed on the invoice :—

"The Woollen Manufacturers' Residue here advised is . . . not sold by us as a Fertiliser of the Soil. But, for protective purposes, we declare that it contains 1 per cent. of Nitrogen."

Now, clearly, this is an evasion of the Fertilisers, etc., Act, inasmuch as Shoddy and similar waste materials are included in the Schedule of the Act, and the Act specifies that they must be sold with a guarantee of the Nitrogen contained Further, it is specified that the quantity of Nitrogen found on analysis must not vary from that guaranteed by more than 1 per cent.

Moreover, if such a material is not sold as a fertiliser of the soil, one would naturally inquire *what* it was sold as !

Purchasers should be careful not to buy under such terms as set out in the above case, but to insist upon the definite guarantee imposed by the Fertilisers, etc., Act.

5. Impure Linseed and Cotton Cakes.

On behalf of a large estate, the owner being a member of the Society, a purchase of 2 tons 8 cwt. of Linseed cake at £19 5s. per ton, and of 2 tons of Undecorticated Cotton cake at £13 5s. per ton, was made in April, the vendors being Messrs. Walter Roberts & Sons, Delph Mills, Brierly Hill, Worcestershire.

The order for each kind of cake had been given on the Order Form recommended by the R.A.S.E. for use by members when making their purchases, and requiring the cakes to be "pure and in sound condition" and, further, guaranteed to contain the percentages of oil and albuminoids which the Fertilisers and Feeding Stuffs Act requires to be stated on the invoice.

Notwithstanding this, the invoice was given without any statement of analysis. My report on the cakes was as follows :—

	April 28, 1921.	
	Linseed cake.	*Cotton cake.*
Moisture	8·95	10·40
Oil	14·85	5·15
Albuminoids	29·06	24·62
Carbohydrates, etc.	33·43	27·80
Woody fibre	8·12	23·52
[1]Mineral matter	5·59	8·51
	100 00	100·00
Nitrogen	4·65	3·94
[1]Including Sand	0·19	4·48

"The Linseed cake is rich in oil but very impure, containing much weed seed, among this being wild mustard seed, which gives the cake quite a pungent taste. The Cotton cake is very woolly and has a large and excessive amount of sand."

An allowance of 10 per cent. was given by the vendors on their account.

J. AUGUSTUS VOELCKER

1 Tudor Street, E.C.4.
May, 1914.

Printed in Great Britain by Butler & Tanner, *Frome and London*

BREEDERS' DIRECTORY.

CATTLE—*continued.*

South Devons.

Antony South Devon Herd, the property of Lieut.-General Sir Reginald Pole-Carew, K.C.B. Pedigree herd of deep-milking cattle, including cows of over 1,000 gallons. Dairy milk records kept. Bulls, Cows, and Heifers for inspection and sale. Apply, C. G. C. Elers, Antony Estate Office, Torpoint, S.O., Cornwall.

Hancock, Charles, The Manor Farm, Cothelstone, Taunton. Herd of Devon Cattle. Telegrams and Station: Bishop's Lydeard.

Welsh Black.

Laidlaw, D. G., Hale Farm, Chiddingstone, Kent. Pedigree Welsh Black Cattle noted for rich quality of their milk and freedom from tuberculosis. Inquiries invited. Station: Penshurst. Telegrams: Laidlaw, Chiddingstone Causeway.

SHEEP.

Cheviots.

Kirk, Thomas, Ettrickhall, Selkirk. 500 ft. above sea-level; Registered flock of Cheviot Sheep. Rams sold annually at Lockerbie.

Dorset Horns.

Merson, Frank J., and Son, North Petherton, Bridgwater. Dorset Horn Rams and Ewes always for sale descended from Royal prize-winners.

Hampshire Downs.

Edmunds, L., Estate Office, Cholderton, near Salisbury. The world-famous flock founded in 1890, by the late Mr. H. C. Stephens. Sheep and Lambs for sale. Station: Grateley, L. & S.W.R. Telegrams: Cholderton.

Kent or Romney Marsh.

Dunster, E. B., Monypenny House, near Rye. Established 1850. Registered Romneys. One of the oldest and best utility flocks in the Marsh. Ram Tegs sold annually in Rye since 1873. Typical Ewes always for sale.

Finn, Arthur Westbroke, Lydd, Romney Marsh, Kent. This flock grazed in Romney Marsh since 1740, has gained first prizes and (twice) reserve for champion Flock, in Ewe Flock competitions. 2,000 registered Sheep can be inspected at any time. Selections for sale.

Jenkin, Bernard, Stowting Court, Stowting, Hythe, Kent. Pure-bred Kent or Romney Marsh Sheep Registered Flock, No. 187. Stock for sale. Station: Westenhanger. Telegrams: East Brabourne.

SHEEP—*continued.*

Lincoln Longwools.

Brocklebank, Joseph, Carlton-le-Moreland, Newark. Pure-bred Lincoln Longwool, Flock No. 10. Large number sold for export every year. Given satisfaction both at home and abroad. Inspection invited. Telegrams: Bassingham. Station: Navenby.

Oxford Downs.

Brassey, Capt. R. B., M.F.H., Heythorpe Park, Chipping Norton. World-renowned prize-winning flock of grand sheep, either sex, at moderate prices. On view at any time. Flock communications to S. Warner, Home Farm.

Hobbs, Robert W., and Sons, Kelmscott, Lechlade, Gloucestershire. This Flock was established in 1863, and consists of from 1,000 to 1,250 registered Oxfords. Numerous prizes for many years won at the principal shows. Apply, Ernest Hobbs, Little Faringdon, Lechlade.

Ryeland.

Homes, W. J., Gold Hill, Bosbury, Ledbury, Herefordshire. Breeder of pedigree Ryeland Sheep, winners of prizes. Flock established 40 years. Stock for sale. Rams used from leading flocks. Telegrams: Homes, Bosbury.

Ryeland Sheep, Clytha Park Flock, winners of many prizes in previous years, including four first prizes Herefordshire and Worcestershire Show, 1916, and two First prizes, four Second prizes, and one for wool at Royal Show, Manchester, 1916; winners of First prize best pen five Ewes at Hereford Ryeland Show and Sale, August 1918. Winners of several Prizes Royal Show, Cardiff, 1919. Awarded first Prize for best Ryeland Flock in United Kingdom, 1919. Shearling Rams and Ram Lambs, etc., for sale. Apply, Manager, Clytha Park, Abergavenny.

Shropshires.

Bibby, Frank, Hardwicke Grange, Shrewsbury. Shropshire Sheep of choicest merit from celebrated prize-winning flock for sale and export. Also Berkshire Pigs. Apply, Bailiff, Hardwicke Grange, Home Farm, Hadnall, Shrewsbury.

PIGS.

Berkshires.

Braishfield Manor Herd of Berkshire Pigs. Bred from best recent prize-winning strains. Young Stock always for Sale. Apply Mr. W. G. Owen, Elm Grove, Braishfield, Romsey.

Manuden Herd of Pedigree Berkshires. **Boars and Gilts**, bred from prize-winners, for sale. Apply, Gee, Manuden House, Essex.

PIGS—*continued.*

Peart, James, Ltd., Woodhall, Hatfield, Herts. Breeders, Ludwick Herds of Pedigree British Friesian Cattle, Berkshire and Wessex Pigs. Telephone: Hatfield 75. Telegrams: Peart, Hatfield, Herts.

Gloucester Old Spots.

Alpass, John, Berkeley, Glos. Gained Reserve at the Royal Show, Darlington, 1920. Correspondence invited.

Fairfield Gloucester Old Spot Herd. Prize-winning Boars and Sows, all ages, and many to select from. J. B. Dowding, Leominster.

Hobbs, Robert W., and Sons, Kelmscott, Lechlade, Glos. Herd founded with the most reliable and fashionable strains. Dineford Lawless purchased for 200 guineas at six months at Capt. Hamilton's sale will follow Woodstock King, winner of second prize at the Royal Counties Show, Reading, 1920. Young Boars and Gilts on sale.

The Fairfield Herd of Gloucester Old Spot Pigs. Winners to choose from Gilts, Boars, Sows, Inspection invited. On the main line of the Shrewsbury and Hereford Railway. J. B. Dowding, Leominster.

Thompson, Walter, Foston Lodge, Flaxton, York. Breeder Gloucester Old Spots Pigs. Gilslake Major, Bagborough and Lumberturn Strain. Boars and Gilts for sale. Stations: Barton Hill, or Flaxton, N.E.Ry.

Large Blacks.

Alderdale Herd of Pedigree Large Blacks. R.A.S.E. and Smithfield Champion prize-winning strains. Boars and Gilts on sale. J. M. Barnsley, Alderdale Farm, Droylsden, Manchester.

Blyford Hall Herd of Large Black Pedigree Pigs, hardy and prolific, from best strains. Boars and Gilts for sale. Apply, S. and H. Scrimgeour, Blyford Hall, Halesworth.

Burwell Herd of Pedigree Large Blacks. Hardy and prolific. Bred from record-price dams. Young Boars of the very best type for sale. F. E. Ball, Burwell, Cambs.

Bixley Herd of Pedigree Large Black Pigs. For sale Boars all ages, well grown, hardy, and bred from noted winners. Apply, Stanley A. Stimpson, Bixley, Norwich.

Douglas Herd of Pedigree Large Black Pigs. True to type. Specially adapted for export; wonderful results in tropical and sub-tropical countries. Address Proprietor: Loudon MacQueen Douglas, 29, West Savile Terrace, Edinburgh.

Edge, S. F., Vahan Herd Pedigree Large Blacks. Royal Champion and other show winners. Reared on open-air system on heavy Weald clay. Out winter and summer, will thrive anywhere. Hundreds to choose from. Inspection invited. Gallops Homestead, Ditchling, Sussex.

Large Black Pigs, Pedigree, kept on grass. Boars and Gilts, prices reasonable. Pedigree Guernseys, White Turkeys, White Wyandottes sittings and stock birds. Currie, Mayfield, Sussex.

Pearce, E. W., The Cross Roads, Whittington, Lichfield. Large Black Pigs, Boars and Gilts, descended from Champion Royal winners, for sale. Prices reasonable. Stations: Lichfield City and Trent Valley, two miles.

West Wratting Herd of Pedigree Large Black Pigs, property of Edward P. Frost, Esq., West Wratting Hall, Cambs. Boars and Gilts at reasonable prices; best blood obtainable. Apply Fred P. Pitts, Farm Manager.

Wiveton Herd Large Black Pigs, owned by Mrs. Watson-Kennedy. The highest price paid at auction for a Boar in 1920, 570 guineas, was bred in this Herd. Inspection invited. James Kemp, Wiveton Hall, Cley, Norfolk.

Large Whites.

Chivers & Sons, Ltd., Histon, Cambs. Over 1,000 pigs bred annually. Breeding Stock live out in large Grass Orchards. Stock Boars include Histon Thor, Champion Peterborough and Suffolk 1920, Histon Lion Heart, Champion Royal Norfolk 1919, Dalmeny Macbeth, 1st Highland and Edinburgh 1920, and own brother to 720-guinea Sow. Young Stock always for Sale.

Committee of Visitors, County Asylum, Winwick, Warrington. Large White Pedigree Pigs. Railway stations: Warrington and Newton-le-Willows. Telegrams: Asylum, Winwick. Telephone No. 171, Warrington. All communications must be addressed "The Steward," County Asylum, Winwick, Warrington.

Dalley, Clement, Cedars, Kidderminster. Breeder of Pedigree Large White Pigs of finest type. Boars and Gilts for sale. Moderate prices.

Greenall, Sir Gilbert, Bart., C.V.O., Walton Hall, Warrington. Walton and Worsley Herd Pedigree Large White Pigs. Since the purchase of the Worsley Herd from the late Earl of Ellesmere in 1913, Championships have been awarded at each Royal Show. Inspection and enquiries cordially invited. Apply to The Manager, Rowswood Farm, Higher-Walton, near Warrington.

PIGS—*continued.*

Kirby Bedon Herd Pedigree Large White Pigs. Grand young Boars and Gilts at moderate prices. Hardy constitution, size, and bone. W. Mitchell, The Vale, Kirby Bedon, Norwich.

Longnor Herd of Pedigree Large White Pigs. Foundation stock obtained only from leading Champion Herds and reared under an open-air system. Boars and Gilts for sale. Major Corbett, Longnor Hall, Shrewsbury.

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Riddell Herd of Pedigree Large White Pigs: reared in Scotland on the open-air system, summer and winter. Hardy fast-growing stock. Moderate prices. Major Sprot of Riddell, Lilliesleaf, Roxburghshire.

Stetchworth Herd of Large White Pigs, the property of the Earl of Ellesmere. Boars and Gilts of all ages at farmers' prices. Apply, W. F. Gardner, Ellesmere Estate Offices, Worsley, or personally to Manager of Piggery, at Worsley, near Manchester.

Winwick Herd of Pedigree Large White Pigs. The property of the Visiting Committee, County Asylum, Winwick, Warrington. Boars and Gilts for sale. Communications to the Steward, County Asylum, Winwick, Warrington.

Middle Whites.

Chivers, John, Histon, Cambs., Pedigree Middle White Pigs. Breeding stock live out in Grass Orchards. Wins 1920 included Champion Boar, Champion Sow, and Cup for Best Middle White Pig, won outright (second year in succession), R.A.S.E. Show, Darlington. Young Stock for sale.

Edge, S. F., Albany Herd Pedigree Middle Whites. Herd started from Champion Strains. Bred on open-air system. Out winter and summer on Weald clay. Marvellous constitutions, wonderful doers and breeders. Hundreds to choose from. Gallops Homestead, Ditchling, Sussex.

Gray, C. Henry, Breeder Middle White and Large Black Pigs. Hill Crest registered Herd. Quality high; prices low. Lindsey Hall, Lindsey, Suffolk.

Peene Herd Pedigree Middle White Pigs. A few grand Boars and Gilts fit for service for sale. Winners at Smithfield, Bath and West Association Show, etc. Apply, Holland, Peene House, Newington, Folkestone.

PIGS—*continued.*

Prestwood Herd of Middle White Pigs, owned by W. B. Hill, Wednesfield, Wolverhampton. Boars and Gilts of choicest breeding from winners at principal shows always on sale. Of hardy constitution; kept out on grass; will thrive anywhere.

The Salvation Army Land Colony Pedigree Herd of Middle Whites, bred from the best strains in the country. Careful selection made for buyers unable to make personal choice. Apply, The Governor, Land Colony, Hadleigh, Essex.

The Wharfedale Herd of Pedigree Middle White Pigs. Royal Show record: Won Championship 1908, 1909, 1910, 1913, 1914, 1915, and 1919. Also First Prize for pen of three Gilts at eleven successive Shows. Well-known characteristics of the Herd are true type and fine quality, combined with size and sound constitution. Prompt and careful attention to all enquiries and orders. Prices always reasonable. Apply, Leopold C. Paget, Middlethorpe Hall, York.

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Yorkshires.

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Wessex.

Sims and Morrison, Woodsprings, Brockweir, near Chepstow, have always on sale Pure-bred Wessex Saddlebacks. These Pigs are in natural condition, carry plenty of coat, and live out of doors. They are the true grazing pigs.

POULTRY.

Buff Orpingtons.

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Major, Arthur C. Breeder and Exhibitor thirty years. Champion Dark and Silver Grey Dorkings, "England's best fowl." Prizes at all shows. Birds exported all over the world. Prices moderate. Arthur C. Major, Ditton, Langley, Bucks.

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Turkeys.

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Various.

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Wallet, William, Live Stock Agent, Castle-Douglas, N.B., supplies on moderate commission all classes of Scotch Cattle and Sheep. Large consignments of pure-bred Galloway Cattle sent to England every year for establishing herds, and also for crossing with white bulls. Belted or Sheeted Cattle very picturesque. Grand Milkers, beautiful butter.

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White & Sons (James A. White), Auctioneers, Land and Timber Surveyors, Agricultural and General Valuers, Estate and Tithe Agents, 18, High Street, Dorking. Telephone : 85 Dorking.

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